THE

# PEDAGOGICAL SEMINARY.

Founded and Edited by G. STANLEY HALL.

VOL. IX. DECEMBER, 1902. No. 4.

## EDITORIAL.

Dr. Colvin discusses the burning question of the relations between content and form in English teaching from a somewhat unusual point of view, and comes to a conclusion which should be suggestive to teachers of this subject both in high school and college.

H. and M. C. Gale contribute another to the still far too few vocabularies of young children. Besides their psycho-genetic value, such studies are now full of suggestion to all teachers of modern foreign languages on the natural method. They would find suggestive hints, especially for their vocabularies in the things, acts, qualities, etc., which children first learn.

G. E. Partridge reports a few notes on school tests.

Mr. G. H. Ellis has made a study of Jesus' method of teaching from a new and purely pedagogic standpoint, which is believed to be unique in its field.

Drs. Hall and Wallin have after some years of collection and observation brought together the results of a study of children's feelings and reactions to clouds, which show them to be a great school of the imagination and shed light upon the position of sentiment in nature teaching. The important bearings of this theme upon psychology are not here worked out, but are reserved for a later form of presentation.

Dr. Chamberlain expresses suggestive views upon a new and large question in which those who take broad views of education must be interested. The Editor may add that for three years he has given a course of lectures, which have steadily grown in number, upon the topic of race pedagogy.

Mr. Wilson gives another chapter of his invaluable bibliography of child study, which no one interested in the subject can do without.

The notes on literature are more extended than usual.

The index of this last number of the volume follows.

# INVENTION VERSUS FORM IN ENGLISH COMPOSITION. AN INDUCTIVE STUDY.

By STEPHEN SHELDON COLVIN, University of Illinois.

*To attend first to invention is the formation of a good style.*
—HINSDALE.

*Originality is a shy flower, and will unfold only in a congenial atmosphere. One may as well grasp a sea anemone and expect it to show its beauty, as to ask a child to write from his own experience when he expects every sentence to be dislocated in order to be improved.*
—Miss H. L. KEELER, in Preface to Studies in English Composition.

## INTRODUCTION.

Of the various subjects belonging to the secondary school curriculum there is none that to-day occupies a more unsatisfactory position than English; and this for several reasons. In the first place, the teaching of English as a distinct specialty on the same footing as mathematics, the modern languages, the classics, the natural sciences and even history is of late development. Further the aims in teaching English are neither clear, nor definitely agreed upon; and even when the end is set down the means of attaining it are not at all certain. These conditions are not confined to English alone, it is true; yet they are present in an unusual degree in this department of the curriculum. For example, the aim and method in mathematics admit of relatively slight discussion, while the other exact sciences that are based on mathematics are in a similar position. The teaching of Greek and Latin is still confined for the most part to a traditional method, which, however unpedagogic, has a definite aim. Instruction in the modern languages varies considerably, but the so-called "natural" method is the one now generally recognized. The pedagogy of biology and related sciences has been clarified of late by the work of Dr. Hodge,[1] and even history is being taught as a living subject, having passed beyond the stage of mere grind and memory cram.

In the field of English, however, there seems to be no satisfactory orientation. This is seen when we consider the teaching of it as literature. Those teachers who have been awakened from their dogmatic slumber, and who realize that literature cannot be taught with grammar and lexicon, are generally sadly

[1] C. F. Hodge: Nature Study and Life, Boston, 1902.

at sea as to the method of making the subject more real and vital. Their teaching often lacks definiteness and fails to appeal to the apperception of the pupils. For many, however, the teaching of literature still means the eternal thumbing of the dictionary, the never ending study of rhetorical subtleties, the wearying quest for historical information. Every allusion is traced to its source, unessential facts are learned only to be forgotten, figures of speech are analyzed and their real strength is thus lost, poetry is scanned until its æsthetic quality is destroyed and so on *ad infinitum*. Thus the most vital of all subjects in the secondary-school curriculum is devitalized; for when you label a piece of wit it ceases to be wit, when you discourse on the beauty of a passage the pupil listens to your words (if he listens at all) and forgets those of the author.

Yet this state of affairs, as bad as it is, is not without hope, for, as has been said, there are some who understand that there is a problem here; and so it happens, either because of, or in spite of the teacher, that many pupils emerge from their high school course with a genuine love for some field of English literature. The tragedy of a defective education does not lie entirely here.

There is a phase to the teaching of English other than that of the teaching of it as literature, and this is, perhaps, the most hopeless phase, for here is a fancied security, and yet a most certain danger, all the more serious because even the progressive teachers have almost without exception failed to clearly recognize it. The danger referred to relates to the prevailing methods of teaching English composition.

It is a well known fact that the majority of boys and girls do not like to write English, or at least that sort of English that is required in a school composition. It may be imagined that this dislike is due to an inherent perverseness on the part of the pupil to put down his thoughts on paper, and it is doubtless true that there are some dullards and indolent pupils who detest any kind of effort merely as effort. A great many young adolescents, however, like to write what they may really claim as their own. For example, John, aged fifteen, takes delight in writing stories of adventure, and composes practical jokes by the page, but hands in a composition on "Tea Culture in China" or "A Scene in a Southern Cotton Field." Mary, a few months younger, entertains her friends with original stories, and creditable attempts at verse, but can find nothing better to write about in her school work than "Bridge Building" and "Patience."

It seems not far from the fact that when a formal composition is announced to a class an unhealthy psychosis is often the result. And what could be more natural? From the pupil's earliest recollection, what has an exercise in written English signified

but criticism of the form of expression? There can be little chance for spontaneity under such conditions, for it is doubtless true that the average pupil imagines a school composition to be as far removed from what is natural and real to him, as grammar and rhetoric are separated from his every day life. He appercieves the whole matter in terms of red ink and blue pencil. But surely the form is not the whole thing; the matter is of some value.

## § 1. The Problem.

And here the definite problem is reached which it is the aim of this paper to discuss, namely: Can invention in English composition be taught? At this point it is necessary to consider briefly what may be included under the term invention. Broadly stated it is that which may be distinguished from the formal correctness of grammar and rhetoric, but the dividing line on the rhetorical side is not always easy to draw. Invention may be defined in other terms as spontaneity, originality, creative power. Genung in his Practical Rhetoric says:

"Invention, as applied to literary undertakings, comprehends the various procedures involved in finding, sifting and ordering the material of discourse. . . . . The first stage, the finding of material by thought and observation, is the fundamental and inclusive office of invention, the distinctive power that we designate in the popular use of the term. Here lies obviously the heart and center of literary production; it is what the writer finds in his subject on the world of thought, that gauges his distinction as an author. Yet this is of all processes, the one least invaded by the rules of the text-book. It is a work so individual, so dependent on the peculiar aptitude and direction of the writer's mind, that each one must be left for the most part to find his way alone, according to the impulse that is in him."

According to Genung, then, literary invention in the strictest sense of the word is not to be taught; and if this is so, our problem will end negatively, except in so far as we find a solution by attempting to remove from the path of the pupil those obstacles to invention which too great stress on the formal correctness of written English places in his way. And even this would be no mean accomplishment.

The present paper, however, ventures to give a slightly different definition to the term invention, a definition which seems to leave open the possibility of teaching invention, or at least stimulating it. From this point of view invention may be defined as the power of the individual to bring his reaction to his environment to clear expression,—to such an expression that the reader or hearer may enter into sympathy with this reaction.

By the term environment must not be understood the mere physical environment, but all those complex conditions, both real and ideal, both material and spiritual, which condition and stimulate the thoughts and feelings of the individual. It is further to be held in mind that invention in this sense is not confined to the genius. Inventive ability does not belong to a Homer or a Shakespeare alone, but to any one who is capable of expressing those psychic states which his relation with the world and his fellows brings into being. The difference is in degree, not in kind.

Proceeding from this standpoint the writer has attempted in an inductive study to answer the question:—

Is the inventive power of the pupil of the secondary school capable of being directed and improved; or must we content ourselves as teachers with the mere formal correctness of composition? Can we do something to stimulate originality and spontaneity, or must we leave the development of these qualities to accident or an act of grace? In essaying to throw light on this problem the writer has narrowed the field of inquiry to pupils of the first and second years of the high-school course, basing his observations on a study of over two thousand compositions of boys and girls between the ages of thirteen and sixteen years (the years of early adolescence). In the analysis of these compositions several subsidiary questions, directly or indirectly related to the main problem have arisen, which will be discussed in their appropriate places.

## § 2. The Treatment of the Material.

The first set of compositions examined numbered 464, handed in during the school year 1900-1901 by 34 boys and 67 girls of the freshman class of the English High School, Worcester, Massachusetts. Three hundred and seven of the compositions were written by girls, and 157 by boys. The subjects of these compositions were not assigned in any case, care further being taken that as far as possible no suggestion in regard to subject should be given, except that all should be strictly original, and relate to something actually experienced or imagined by the writer of the composition. The purpose of the test was to discover whether compositions written under such circumstances, unhampered by direction from the teacher, would tend to develop spontaneity. All compositions which seemed in any way not original were thrown out, the test of originality being made by conversation with the pupils concerning their work, and by the teacher's knowledge of the pupil's ability as a writer. No suggestion was made to the pupils that these particular compositions had any wider purpose than that of an ordinary English

exercise. They were criticised, corrected and returned as a part of the regular year's work in composition.

The first point noted about these papers was the character of the subjects chosen. The girls selected in 216 cases (70.4 per cent.) subjects in simple narration; the boys in 100 cases (63.6 per cent.) did the same. The reason for this choice seems perfectly obvious. In the first place the mere sequence in time required for the arrangement of a composition in narration offers less difficulties than the sequence in space required for simple description, and for less difficulty than the more complex arrangement required for exposition, comparison and argumentation. Probably the most important factor in this choice, however, is to be found in the fact that whatever involves movement is inherently striking and interesting.

Thirty-three compositions (10.7 per cent.) written by the girls were on subjects in simple description, while the corresponding figures for the boys were thirty-two compositions (20.4 per cent.). Of subjects combining both narration and description 28 (9.1 per cent.) were written by the girls and eight (5.1 per cent.) by the boys. The remaining compositions were principally in exposition and of such a character that they differed but slightly from the themes in narration and description.

The second point noted was the elements found in these compositions giving evidence of inventive power. No attempt was made to make a thoroughgoing logical classification, only those inventive qualities actually found in the pupils' compositions being selected for study. The qualities noted were five, namely: Sense of humor, imaginative power, feeling, perceptive ability and logical power. The results were as follows:

In the boys' compositions 11.5 per cent. contained imaginative elements, 2.8 per cent. elements of feeling, 19.1 per cent. humor, 1.2 per cent. showed perceptive ability and 21.5 per cent. gave some evidences of logical power. The corresponding figures for the girls were: Imagination, 8.5 per cent.; feeling, 11 per cent.; humor, 9.1 per cent.; perceptive ability, 2.3 per cent.; logical power, 31.7 per cent.

In this set of compositions, as may be seen from the above, logical power was the inventive element which stood the highest for both boys and girls; humor came second in the list for boys, and feeling second in the list for girls; imagination stood third for the boys, and humor third for the girls; while in the fourth place came feeling for the boys and imagination for the girls, and last for both sexes stood perceptive ability.

As evidence of logical power the writer of the present discussion noted the sequence and arrangement of the compositions as far as they revealed a sense of relationship and unity. Many compositions showed an almost complete lack of this sense of

arrangement, the worst having absolutely no sequence either in time or in place. A slight advance over these were compositions which were a simple catalogue with no higher evidence of unity than that of mere time and space. Less than a fourth of the compositions written by the boys, and less than a third of those written by the girls, showed any order of arrangement other than that of a spacial or temporal sequence. Logical ability, however, as has been said, stood considerably ahead of the other inventive qualities in the first group of compositions, while for the boys the sense of humor approached it quite nearly. For the girls the feeling elements, which stand second, are found in about a tenth of the entire number of compositions. The other qualities, with the exception of imagination on the part of the boys, stand relatively low.

There can be but little doubt that the order and proportion of inventive elements in these compositions do not show in any considerable degree the real reaction of the writers to their environment. Feeling is a largely dominant element in the psychic life of adolescents. That little evidence of it is found in the first set of compositions indicates that these compositions were not calculated to call forth spontaneity. Other tests made with the same group of pupils showed that feeling to a considerable degree determined their apperception for, and comprehension of, literature. One hundred boys and girls who had just finished the reading of Evangeline were asked to indicate the scene in the story that had impressed them the most, and were further asked to state a reason for their answer. With but one exception their replies indicated conclusively that the scene selected was one which had strongly appealed to their feelings. Further tests made with the same pupils showed almost identical results.

The quality of imagination, extremely active and vivid during adolescence, stands surprisingly low especially for the girls. Most of the composition of an imaginative character were of a very simple nature, such subjects as "The adventures of a Needle" or "The Story of a Ten Cent Piece" being favorites. Thirty-five per cent. of the girls' compositions on imaginative topics were more or less lengthy stories. Twenty-two per cent. of the boys' imaginative themes were stories also.

Humor also finds a large place in the psychic elements of adolescence. The boys showed a perception for this quality in about one-fifth of the compositions written in the first set. The girls' compositions contained but few humorous elements. The humor in the themes of both sexes was of a crude type. Practical jokes appealed particularly to the girls. Uncouth characters provided the boys with subjects for several humorous themes, the old-clothes dealer and the Chinese laundry-man being particular favorites.

An important element in all descriptive and narrative writing is observational power, put down in the present study under the heading of perceptive ability. It is that form of apperception which enables the individual to see in the seemingly trivial and commonplace something of interest. Yet only seven compositions written by the girls gave evidence of this quality, while but two boys succeeded in describing a simple incident in a "newsy" manner.

An attempt was made in the set of compositions first analyzed, as well as those later examined, to grade the themes according to both inventive power and formal correctness, and for this purpose six grades of inventive ability were distinguished ranging from the very lowest type where the compositions were mere collections of sentences to the highest where imagination, humor, critical power and other qualities were found to a considerable degree. Corresponding to these six diversions of inventive power were six groups of formal and rhetorical correctness. The division into six groups was of course arbitrary, and made as a matter of convenience. It is, however, the grouping that has been used to some extent in psycho-physic measurements and offers certain advantages. In the first three grades fell those themes which on the whole showed a positive lack of merit, while in the three higher grades were placed the compositions whose merits surpass their defects. The highest grade contained those compositions which showed marked excellences, the lowest those which were distinctly without merit. The results are shown for the five groups in tables I to X inclusive, the odd

TABLE I.

| | I | II | III | IV | V | VI | T |
|---|---|---|---|---|---|---|---|
| I | 2 | 6 | 1 | 1 | | | 10 |
| II | 2 | 25 | 13 | 1 | | | 41 |
| III | 5 | 14 | 52 | 9 | 2 | | 82 |
| IV | | 5 | 7 | 7 | 1 | | 20 |
| V | | | | 3 | 1 | | 4 |
| VI | | | | | | | |
| T | 9 | 50 | 73 | 21 | 4 | | 157 |

TABLE II.

| | I | II | III | IV | V | VI | T |
|---|---|---|---|---|---|---|---|
| I | | 6 | 8 | 1 | 1 | | 16 |
| II | | 20 | 39 | 13 | 1 | | 73 |
| III | 1 | 24 | 47 | 36 | 3 | | 111 |
| IV | | 1 | 29 | 32 | 13 | | 75 |
| V | | | | 11 | 20 | | 31 |
| VI | | | | | | 1 | 1 |
| T | 1 | 51 | 123 | 93 | 38 | 1 | 307 |

TABLE III.

| | I | II | III | IV | V | VI | T |
|---|---|---|---|---|---|---|---|
| I | 2 | 5 | 1 | | | | 8 |
| II | 1 | 9 | 4 | 2 | | | 16 |
| III | | 2 | 20 | 18 | | | 40 |
| IV | 1 | 2 | 9 | 7 | 5 | | 24 |
| V | | | 1 | 3 | 4 | | 8 |
| VI | | | | | | | |
| T | 4 | 18 | 35 | 30 | 9 | | 96 |

TABLE IV.

| | I | II | III | IV | V | VI | T |
|---|---|---|---|---|---|---|---|
| I | 1 | 2 | 1 | | | | 4 |
| II | 1 | 6 | 8 | 9 | | | 24 |
| III | 1 | 4 | 60 | 59 | 56 | | 180 |
| IV | | 1 | 15 | 47 | 16 | | 79 |
| V | | | | 18 | 39 | 23 | 80 |
| VI | | | | | | | |
| T | 3 | 13 | 84 | 133 | 111 | 23 | 367 |

TABLE V.

| | I | II | III | IV | V | VI | T |
|---|---|---|---|---|---|---|---|
| I | | | | | | | |
| II | | 10 | 19 | 2 | | | 31 |
| III | | 5 | 60 | 22 | 1 | | 88 |
| IV | | 1 | 9 | 48 | 1 | | 59 |
| V | | | 1 | 3 | 11 | | 15 |
| VI | | | | | | | |
| T | | 16 | 89 | 75 | 13 | | 193 |

TABLE VI.

| | I | II | III | IV | V | VI | T |
|---|---|---|---|---|---|---|---|
| I | 1 | | | | | | 1 |
| II | | 3 | 11 | 2 | | | 16 |
| III | 1 | 3 | 68 | 46 | | | 118 |
| IV | | | 14 | 68 | 9 | 1 | 92 |
| V | | | 2 | 9 | 11 | 2 | 24 |
| VI | | | | | 1 | 1 | 2 |
| T | 2 | 6 | 95 | 125 | 21 | 4 | 253 |

TABLE VII.

| | I | II | III | IV | V | VI | T |
|---|---|---|---|---|---|---|---|
| I | | | | | | | |
| II | 1 | 5 | 2 | | | | 8 |
| III | | 6 | 32 | 24 | | | 62 |
| IV | | 2 | 17 | 70 | 14 | | 103 |
| V | | | | 2 | 8 | | 10 |
| VI | | | | | 2 | | 2 |
| T | 1 | 13 | 51 | 96 | 24 | | 185 |

TABLE VIII.

| | I | II | III | IV | V | VI | T |
|---|---|---|---|---|---|---|---|
| I | | | | | | | |
| II | 1 | 6 | 4 | 1 | | | 12 |
| III | | 6 | 45 | 30 | | | 81 |
| IV | | | 8 | 83 | 25 | | 116 |
| V | | | | 7 | 22 | | 29 |
| VI | | | | 1 | 1 | | 2 |
| T | 1 | 12 | 57 | 122 | 48 | | 240 |

TABLE IX.

| | I | II | III | IV | V | VI | T |
|---|---|---|---|---|---|---|---|
| I | | | | | | | |
| II | | | 1 | | | | 1 |
| III | | 2 | 25 | 17 | | | 44 |
| IV | | 2 | 27 | 46 | 18 | | 93 |
| V | | | 3 | 10 | 19 | 2 | 34 |
| VI | | | | 2 | 5 | 10 | 17 |
| T | | 4 | 56 | 75 | 42 | 12 | 189 |

TABLE X.

| | I | II | III | IV | V | VI | T |
|---|---|---|---|---|---|---|---|
| I | | | | | | | |
| II | | 1 | | | | | 1 |
| III | | | 13 | 10 | | | 23 |
| IV | | 2 | 12 | 83 | 35 | | 132 |
| V | | | 5 | 16 | 36 | 12 | 69 |
| VI | | | | 5 | 9 | 24 | 38 |
| T | | 3 | 30 | 114 | 80 | 36 | 263 |

numbers for the boys and the even numbers for the girls. The numerals above each table indicate the degrees of formal cor-

rectness, those at the left of inventive power. The letter "T" indicates totals for each grade. The tables show the number of compositions in each group, the number in the lower right hand corner being the sum of the totals for each grade; and also indicate the number of compositions in which the grade for formal correctness and inventive power was the same. For example, in table one, two compositions were given a grade of I both in formal correctness and inventive power, 25 compositions were given a grade of II, 52 were given a grade of III, seven were given a grade of IV and one was given a grade of V. Examining more closely tables I and II, which give the figures for the first set of compositions, we find that of the boys' compositions 24 (15.3 per cent.) were above the third grade in inventive power, and 25 (15.9 per cent.) were above this grade in formal correctness. The corresponding figures for the girls were: inventive power, 107 compositions (34.9 per cent.); formal correctness, 132 compositions (42.9 per cent.). The average grade of inventive power was for the boys 2.79; for the girls 3.12. In formal correctness the average grade for the boys was 2.75 and for the girls 3.39.

In the second set of compositions studied, an attempt was made to stimulate spontaneity by requiring the themes to be read in the class and criticised by the pupils rather than by the teacher. The content of the themes was open to criticism as well as the form. The papers were marked but not corrected. They were brief in character and not prepared as a part of the formal work. They were written for the most part by the same pupils who wrote the first set, and were presented from time to time during the same year. Four hundred and sixty-three of these themes, 96 from the boys and 367 from the girls, were analyzed and tabulated. Like the first set the large majority were themes in simple narration. The remainder were entirely in narration and description, and in simple description. The per cent. of the compositions in the second group containing the various inventive elements is as follows:

Imagination: boys, 6.3 per cent.; girls, 8.2 per cent.
Feeling: boys, 9.4 per cent.; girls, 12.5 per cent.
Humor: boys, 30.2 per cent.; girls, 16.6 per cent.
Perceptive ability: boys, 8.3 per cent.; girls, 9.5 per cent.

Logical power was not tabulated in this second set of compositions because the brevity of the exercises made it difficult to make a fair estimate of this quality. Comparing these per cents. with those for the first group of compositions, we notice the marked increase in the element of humor for both boys and girls. This increase is probably to be explained from the fact that the compositions were written with the class, and not with the teacher, in view; and hence a more spontaneous and natu-

ral product was the result. Perceptive power was also stimulated. On the part of the boys the element of feeling was more than three times as prominent in the second set of compositions as in the first, and slightly greater on the part of the girls. Imagination shows a considerable decrease on the part of the boys, and a slight decrease on the part of the girls. This may be accounted for partly by the fact that the brevity of the compositions gave little opportunity for stories.

If we consider the grading of the compositions in the second set we notice a decided improvement both in formal correctness and in inventive power. The figures are as follows:

Boys: average above the third grade, in formal correctness 40.6 per cent., in inventive power, 33.3 per cent.; average grade in formal correctness, 3.14, in inventive power, 3.08.

Girls: above the third grade in formal correctness, 72.8 per cent., in inventive power, 43.3 per cent.; average grade in formal correctness, 4.11, in inventive power, 3.56.

The meaning of these figures will be further discussed in a subsequent portion of the paper. We may observe in passing, however, that the inventive power of the pupils has evidently been stimulated by making the class rather than the teacher the principal judge of the merit of the themes.

The third, fourth and fifth sets of compositions were prepared during one week of January, 1902, by pupils of the English High School and of the South End High School, Worcester, Massachusetts. Like the first two sets of compositions these latter papers were composed as a part of the regular theme work, the purpose for which they were intended being unknown to the writers. The greater part of the papers were written by first year students. About 25 per cent. of the total, however, were prepared by pupils in the second year of the course. Five hundred and sixty-seven were written by boys and 756 by girls. With few exceptions all pupils in the classes to whom the work was given handed in papers in each of the three sets, thus making a comparison between these sets of particular value. These papers, unlike those already discussed, were not prepared under the writer's personal supervision, but furnished to him through the kindness of the English teachers in the two high schools. In these latter themes the pupils were not allowed to select freely the subject for their compositions, but were given the choice in each set of one of five topics. The papers of the third and fourth sets were written in the class during a recitation period of forty-five minutes, but those of the last set, on account of their more pretentious character, were prepared outside and handed in the following day. The selection of a list of subjects from which the pupils were to choose a theme was determined by a study of those compositions in the first two sets that con-

tained elements of originality and gave evidence of being written along the lines of the pupils' interests. The endeavor was made entirely in the fourth and fifth sets, and partly in the third, to offer topics which would tend directly to stimulate inventive power.

The topics in the third set of compositions were: A Sleigh Ride; Description of a Worcester Building; A Voyage in an Air Ship in the Year 2000; The Woods in Autumn; A Humorous Character or Incident. The first two subjects named were selected as typical themes in simple narration and simple description, and were put in the list to test the tendency which the pupils had to choose a subject requiring practically no spontaneity or inventive power over one which made demands for a higher grade of ability. The third subject was chosen to test the pupils' interests in a simple imaginative composition, the fourth to test their interests in the æsthetic and in the imaginative of a more subtle type and the fifth to test their interests in humor. In this set 193 compositions were handed in by the boys and 253 by the girls. The results of their choice follow.

A Sleigh Ride: Boys, 67 compositions (34.7 per cent.); girls, 145 compositions (57.3 per cent.).

A Voyage in an Air Ship: Boys, 54 compositions (27.9 per cent.); girls, 16 compositions (6.3 per cent.).

The Woods in Autumn: Boys, 26 compositions (13.5 per cent.); girls, 54 compositions (21.3 per cent.).

Description of a Worcester Building: Boys, 23 compositions (11.9 per cent.); girls, 11 compositions (4.4 per cent.).

A Humorous Character or Incident: Boys, 23 compositions (11.9 per cent.); girls, 27 compositions (10.7 per cent.).

It will be seen from the above that it is a composition in simple narration, "A Sleigh Ride," that leads for both boys and girls, being chosen by the former in more than one-third of the total number written, and by the latter in considerably over a half. For the boys an imaginative composition, "A Voyage in an Air Ship," is second, being the subject of more than a fourth of the compositions in this set. The subject second in the list for the girls was a theme demanding some apperception for the æsthetic and a degree of descriptive and imaginative ability, "The Woods in Autumn," chosen in about a fifth of the compositions. This was the third choice in the case of the boys, being selected in about one-seventh of the compositions. Third for the girls stood the compositions on "A Humorous Character or Incident," selected in slightly over one-tenth of the whole number of themes written by them. This subject divides with the themes describing a Worcester building the fourth place in the compositions of the boys, each subject being selected in approximately twelve per cent. of the themes.

Fourth for the girls, at a little over six per cent., stands "A Voyage in an Air Ship," and last, at something over four per cent., "A Description of a Worcester Building." It is clear from these figures that both boys and girls tended to select subjects of a simple and mechanical nature, and that compositions requiring imagination, humor and æsthetic perception are less often chosen.

The per cent. of compositions in the third set, containing the principal inventive elements, is as follows:

Boys: imagination, 33.6 per cent.; feeling, 15.5 per cent.; humor, 13.9 per cent.; perception, 5.7 per cent.; logic, 10.9 per cent.

Girls: imagination, 37.5 per cent.; feeling, 22.1 per cent.; humor, 13 per cent.; perception, 8.7 per cent.; logic, 11.1 per cent.

It will be noticed that there is a marked increase in imaginative power and feeling for both boys and girls when the per cents. of these qualities are compared with those of the first two sets. In humor there is a considerable falling off and in perceptive ability only slight differences between the second and the third sets. There is a considerable decrease in logical power as compared with the first set. This is doubtless to be explained by the fact that the compositions of the group now under discussion were written in the class, while those of the first group were prepared outside and were generally more elaborate. The marked increase of the imaginative elements in the third group may be explained from the fact that themes calculated to call forth this quality were suggested. Further, there seems to be a correlation between imagination and feeling, which would account for the increase of the latter quality through indirect stimulation. The cause for the decrease of humor may be better discussed when the fourth set of compositions, intended to directly stimulate this quality, is considered.

The analysis of the third set of compositions from the standpoint of inventive ability and formal correctness shows the following results:

Boys: above the third grade, in formal correctness, 45.6 per cent., in inventive power, 38.3 per cent.; average grade, in formal correctness, 3.34, in inventive power, 3.30.

Girls: above the third grade, in formal correctness, 59.3 per cent., in inventive power, 46.6 per cent.; average grade, in formal correctness, 4.06, in inventive power, 3.51.

Comparing these figures with those of the two preceding sets, we see that they are considerably higher in the group now under discussion, with the exception that the compositions of the girls in the second group have a higher per cent. and a higher grade in formal correctness, and a slightly grade in inventive power.

In the fourth group of compositions the pupils were directed to select one composition from the following on which to write: A Chinese Laundry, A Practical Joke, A Comical Incident, A Humorous Character, The Most Laughable Story I Ever Heard. As has been said, these subjects were presented with the intention of testing the pupils' apperception for the humorous. All the subjects except the first clearly indicated the character of the composition desired. The first subject was selected for the purpose of determining the number of pupils who would find in it something suggestive of humor, and also for determining the number who would select this subject as a composition in simple narration, description or exposition, thus avoiding the necessity of writing on a humorous topic. The number of compositions handed in by the boys was 185, by the girls 240. The results follow:

A Chinese Laundry: Boys, 89 compositions (48.1 per cent.); girls, 90 compositions (37.5 per cent.).

A Comical Incident: Boys, 42 compositions (22.7 per cent.); girls, 45 compositions (18.8 per cent.).

A Practical Joke: Boys, 24 compositions (12.9 per cent.); girls, 49 compositions (20.4 per cent.).

A Humorous Character: Boys, 15 compositions (8.1 per cent.); girls, 33 compositions (13.7 per cent.).

The Most Laughable Story I Ever Heard: Boys, 15 compositions (8.1 per cent.); girls, 23 compositions (9.6 per cent.).

Of the compositions by the boys on the topic "A Chinese Laundry," 20 per cent. contained humorous elements; of the compositions of the girls, a little less than five per cent. The remainder of the compositions on this topic were for the most part lacking in inventive power. The topic stands first in the list for both boys and girls, being chosen by the former in approximately half of the themes, and by the latter in considerably over a third. Second in the list for the boys came "A Comical Incident," as the subject of over one-fifth of the compositions; while "A Practical Joke" stood second for the girls, also at one-fifth of the total. Third for the boys was "A Practical Joke," selected in one-eighth of the themes, and third for the girls came "A Comical Incident," chosen in nearly one-fifth of the cases. Fourth for both sexes stood "A Humorous Character," being the subject of approximately one-twelfth of the compositions by the boys, and of one-seventh by the girls. Last for both boys and girls stood "The Most Laughable Story I Ever Heard," at less than 10 per cent. of the total.

When we analyze this set of compositions for the purpose of classifying the principal elements of invention, we find, as we would naturally expect, that humor leads largely for both boys and girls, being found in approximately 65 per cent. of the

compositions by both sexes. The exact figures in per cents. are:

Boys: imagination, 10.7; feeling, 1.6; humor, 64.1; perception, 5.9; logic, 13.5.

Girls: imagination, 11.3; feeling, 3.3; humor, 65; perception, 8.3; logic, 14.6.

We note, however, a marked falling off in the elements of both imagination and feeling, the latter standing at less than two per cent. for the boys, and barely over three per cent. for the girls. Perceptive ability remains practically unchanged, while there is a slight increase in logical power. From the above facts there would seem to be an inverse relation between the elements of feeling and imagination and of humor. This would also in part explain the fact that in the third set of compositions, where there is an increase in imagination and feeling, there is a corresponding decrease in humor. Later on we will discuss more fully the humorous elements in these and other compositions, and we shall find that the character of the humor which appeals to boys and girls of the early adolescent age is of such a nature as to naturally exclude the higher inventive elements.

In the fourth set of compositions the per cent. of papers above the third grade in formal correctness was for the boys 64.9 and for the girls 70.8. The average grade was for the boys 3.69 and for the girls 3.85. The corresponding figures for inventive power were: compositions above the third grade, 62.2 per cent. for the boys and 61.3 for the girls; average grade, 3.65 for the boys and 3.70 for the girls. Comparing these figures with those for the preceding sets of compositions, we notice that there is an increase for both boys and girls in inventive ability and formal correctness, with the exception that for the girls the average grade for formal correctness is higher in the second and third group, and the per cent. of compositions above the third grade in formal correctness is higher in the second group.

In the fifth and last group of compositions 452 themes were tabulated, of which 189 were written by the boys and 263 by the girls. The subjects from which the pupils were allowed to select were: The Adventures of a School Desk, A Trip to the Moon, An Original Story, A Fairy Story, How the Flowers Got their Colors. These themes were intended to stimulate the imagination directly, and indirectly the feelings and other inventive qualities. It was the intention to present in the first subject a suggestion for a composition based on simple imaginative elements well within the scope of the apperception of the pupils. The second subject was designed to appeal to what may be called the scientific imagination (the Jules Verne type), and was analogous to the theme "A Voyage in an Air Ship,"

in the third group. The third subject was chosen with a view to stimulating the higher powers of imagination and feeling, and also to test the more simple logical powers. The fourth was designed to test particularly the hold that the fairy story, so popular among smaller children, continued to have on pupils of the high school age. The fifth subject aimed to test the pupil's interest in a nature myth. The subject most chosen by the boys was "The Adventures of a School Desk," 78 compositions (41.3 per cent.) being presented on this subject. For the girls the leading subject was "An Original Story," selected as a topic in 96 iustances (36.5 per cent.). Second for the boys came "A Trip to the Moon," this subject being selected in 50 compositions (26.5 per cent.). In second place for the girls was "The Adventures of a School Desk," which formed the subject of 93 compositions (35.4 per cent.). Third for the boys stood "An Original Story," selected in 49 instances (25.9 per cent.). "A Trip to the Moon" stood third for the girls, the figures being 27 compositions (10.3 per cent.). Fourth for both boys and girls was "A Fairy Story," being the subject of eight compositions written by the boys (4.2 per cent.) and of 25 compositions written by the girls (9.5 per cent.). Last for both boys and girls came the subject "How the Flowers Got their Colors" in four compositions (2.1 per cent. written by the boys, and in 22 compositions (8.4 per cent.) written by the girls. The above choice of subjects seems to indicate significant facts in regard to the quality of imagination possessed by boys and girls at the early adolescent period, and also to suggest important differences between the sexes. The bearing of these facts will be discussed later.

Considering in detail the elements of inventive power shown in this set of compositions, we find that they considerably excel those in the previous sets, with the sole exception of humor, which stands higher in two of the previous sets. Imagination leads for both boys and girls; 87.8 per cent. of the compositions of the boys containing imaginative elements, while for the girls the figures are still higher (96.2 per cent.).

Second comes feeling at 60.9 per cent. for the boys and 81.3 per cent. for the girls. Third is logical power found in 38.1 per cent. of the boys' compositions, and in 55.5 per cent. of those of the girls. Fourth is humor, noted in 24.3 per cent. of the compositions of the boys, and in 10.3 per cent. of those of the girls. Last stands perceptive ability, found in 10.6 per cent. of the compositions of the boys and in 9.9 per cent. of the compositions of the girls.

Considering the grades for formal correctness and for inventive power, we notice that the fifth set of compositions leads the preceding four in all respects. The exact figures follow :

Above the third grade in inventive power, 76.2 per cent. of the compositions of the boys, and 90.9 per cent. of the compositions of the girls; in formal correctness, 68.3 per cent. of the compositions of the boys, and 87.4 per cent. of the compositions of the girls.

Average grade in inventive power, 4.12 for the boys and 4.46 for the girls; in formal correctness, 4.01 for the boys and 4.44 for the girls.

The significance of these figures will be considered in a subsequent part of the discussion.

### § 3. Discussion of the Results in Detail.

With the data now before us it will be possible to consider more directly the question raised at the beginning of this inquiry, namely: Can invention in English composition be taught? or more exactly, can spontaneity and originality be stimulated to seek expression? A further consideration of the grades of inventive power and of formal correctness for the five groups of compositions will help us to formulate an answer. If we study the figures belonging to these grades as presented in the previous pages, we will notice that there is a continual progress in inventive power both in the per cent. of compositions above the third grade, and in the average grade, with the single exception of the girls' compositions under group three, where there is a slight falling off in the average grade (from 3.56 to 3.51). The question now arises, Is the improvement thus indicated the result of mere accident or is it due to conditions capable of being controlled by the teacher?

In discussing this point, we must keep in mind the circumstances under which the various sets of compositions were written. It will be recalled that the compositions of the first set were prepared without further suggestion or direction from the teacher, as to topic and subject matter, than that all the themes were to be within the range of the pupil's experience, and in every respect original. This method has often been advocated as the one best adapted to secure spontaneity, but the results of the present study hardly warrant such a conclusion. The lack of any marked originality in the compositions of the first set may, I believe, be attributed to several causes. In the first place the natural inertia and lack of genuine interest in school subjects characteristic of many pupils would cause them to select the topic nearest at hand,—an insipid theme in simple narration or in description,—rather than to cast about for a subject more really in touch with their life. Moreover, with puberty there often comes a bashfulness and self-consciousness, which prevent the young adolescent from detailing his more vital experiences, at least to the teacher. But the most potent

factor, I believe, in inhibiting a spontaneous expression of thoughts and feelings is, as has already been said, the association of writing in school with mere formal correction and criticism from an adult, and often a very narrow and pedantic standpoint. We need, so to speak, more mental sunshine in our schools. The psychic climate has long been too bleak and chill. The environment has not been suited to the development of spontaneity. Originality must be stimulated by the teacher if she wishes to get results; and such a stimulation is only possible by appealing to the fundamental interests of the pupils.

In the second set of compositions such an appeal was made, and with results to a degree satisfactory. These themes, it will be remembered, were written to be read in the class, and not to be corrected by the teacher. The interest appealed to was a social one, the desire of appearing to advantage before one's fellows. Insipid compositions were no longer at a premium; the audience which was to judge them was alert and ready to see merits and detect faults; not the merits of correct orthography and grammatical accuracy; nor the faults of careless punctuation and the violations of rhetorical principles; but the merit of a comical situation, a genuine sentiment, a vivid imagination or a true insight, and the fault of a tedious description or an uninteresting narrative. It, however, follows as a necessary corollary that if the audience is to approve, it must clearly understand; and so it happens that not only is inventive ability stimulated, but formal correctness is enhanced as well.

The results obtained in the second set of compositions, though encouraging, were not in all respects satisfactory. As has already been pointed out, the great increase in inventive ability was in the quality of humor, and the other elements of invention were not correspondingly stimulated. Evidently all school compositions should not be prepared to be read before the class without suggestion as to topic or nature, as were those in the second group. We must seek to stimulate spontaneity more directly, and this can be done only when the teacher understands something of the fundamental interests of boys and girls; an understanding which would do more for the teaching of composition than would a knowledge of all the principles of rhetoric and grammar. It is the province of the teacher to find out these interests, both individual and collective, as far as it lies in her power.

In the third, fourth and fifth groups of compositions the aim was made to get at some of these fundamental interests, and also to discover more exactly their scope and nature. The results show, as has already been pointed out, that there was a continual progression in inventive power, which progression was directly associated with an increasing definiteness of direct

suggestion as to the nature of the theme to be written upon. The conclusion would therefore seem justifiable that the most certain way of securing spontaneity is to stimulate it by presenting to the pupils subjects for compositions chosen along the lines of the pupils' interests.

## § 4. Some Fundamental Interests of Young Adolescents.

Considering more carefully some of these interests as revealed in the spontaneous elements of the compositions under discussion, we notice if we average the inventive qualities found in each of the five sets of compositions, that for the boys humor stands first at 30.3 per cent., imagination second at 29.98 per cent., logical power third at 21 per cent., feeling fourth at 18.04 per cent., and perceptive ability fifth at 6.35 per cent. For the girls the order is imagination first at 32.34 per cent., logical power second at 28.2 per cent., feeling third at 26.04 per cent., humor fourth at 22.08 per cent., and perceptive ability fifth at 7.74 per cent. If we exclude from this average the first set of compositions, in which no appeal, direct or indirect, was made to any of the qualities of invention, the order and per cents. are slightly, though not materially changed. For the boys imagination leads at nearly 35 per cent., followed closely by humor; feeling comes third separated by a considerable interval, and close to it in the fourth place stands logical power, with perceptive ability very much lower in the fifth place. The order for the girls is imagination first at nearly 40 per cent., while next, but nearly nine points lower, comes feeling. Logical power is a close third and is followed by humor, with but a small interval between, while perceptive ability comes fifth, nearly fifteen per cent. below. In other words, humor, which stood first for the boys in an average of the five sets, stands second in an average of the four last sets, imagination having passed it. Feeling has come into the third place and logical power has fallen below it to fourth, while perceptive ability still remains last. For the girls, however, the only change is in feeling which is in second place, while logical power has fallen to third. As regards the qualities of imagination and humor it must be remembered that the subjects suggested tended in many cases to call forth these elements directly, while feeling, logical power and perception were stimulated only indirectly. If we further study the above results we will see that for both boys and girls imagination and humor seem capable of direct stimulation, that feeling is indirectly stimulated in imaginative compositions, but not in those which are on humorous subjects; that logical power varies largely with the extent of the composition, but does not seem to accompany any particular element of spontaneity, while per-

ceptive power varies but slighly from set to set, and is by far the lowest of the five forms of inventive ability, and seemingly difficult of indirect stimulation. The study of these inventive elements in the various sets, and of their averages, shows some interesting differences between the inventive power of boys and girls as based on their abilities and interests. These will be discussed later.

(a) *Imagination.*

Turning from these general considerations of the factors that contribute to spontaneity, we may next consider these elements in detail with a view of determining more exactly the character of the interests which lie at the basis of each. Imagination shows, as might be expected, that it is largely of the mere reproductive type, the productive imagination being more in evidence among the girls than the boys. The original story has pronounced interest, being the favorite theme for the girls in the fifth set of compositions. An imaginary theme that comes close to the experiences of every-day life, and that demands no high flights of fancy is one that is apt to be chosen, as shown by the fact that 41.3 per cent. of the boys and 35.4 per cent. of the girls selected "The Adventures of a School Desk" in the fifth set of compositions. As has already been pointed out, what may be termed the scientific imagination has particular interest for the boys. This is made clear when we remember that of the boys in the third set of compositions 27.9 per cent. chose as a subject, "A Voyage in an Air Ship," and in the fifth set 26.5 per cent. chose "A Trip to the Moon." For the girls, however, this type of imaginative composition seemed to possess far less attraction. The fairy story and nature myth, which are supposed to be of particular interest to the pupils in the lower grades, do not seem to appeal to the pupils of the high school age. This is indicated by the fact that among the girls only 9.5 per cent. selected "A Fairy Story" as a theme upon which to write, while only 8.4 per cent. selected the subject, "How the Flowers Got Their Colors." For the boys the figures are still lower. It should be added, however, that the latter named subject demands an imaginative treatment of a relatively high type, and this alone may have prevented some pupils from writing on this subject. Further, in the case of the girls a considerable number who wrote on the theme, "A Trip to the Moon," treated it as a fairy story.

(b) *Humor.*

As has already been stated the interests of boys and girls in humorous topics seem to be of a relatively low grade. An analysis of the last three sets of compositions confirms this view.

Not considering the themes in the fourth set of compositions, which were designed to stimulate the quality directly, nor those in the third set on the subject, "A Humorous Character or Incident," we find that of the remaining papers 52 compositions (14.5 per cent.) were written by boys, and 61 (12.5 per cent.) were written by girls on humorous topics, or at least contained elements of humor. These elements have been classified under seven different heads, as follows:

Conceptions of humor founded on the teasing and bullying instinct: boys, 19 compositions (36.5 per cent.); girls, 17 compositions (27.9 per cent.).

Humor of the farce comedy type: boys, 13 compositions (25 per cent.); girls, 10 compositions (16.4 per cent.).

Strikingly ridiculous and absurd situations: boys, nine compositions (17.3 per cent.); girls, 14 compositions (22.9 per cent.).

A pun: boys, four compositions (7.7 per cent.); girls, five compositions (8.2 per cent.).

Story with a point: boys, two compositions (3.8 per cent.); girls, no compositions.

A peculiar character: boys, two compositions (3.8 per cent.); girls, four compositions (6.6 per cent.).

A witty or subtle turn of thought: boys, three compositions (5.8 per cent.); girls, 11 compositions (18 per cent.).

The above classification is not mutually exclusive in all particulars. The predominating character of each humorous composition was taken, however, as determining the head under which it should fall. An attempt was made in arranging the various humorous elements to place them in a progressive order, the more crude coming first. From this it can be seen that the finer elements are lacking in a marked degree both for boys and girls. It is the discomfiture of a companion, an absurd situation or a joke of the "knock-about" variety that has the most interest.

A tabulation of the humorous elements found in the compositions on the subject "A Comical Incident" in groups three and four, shows results practically identical with the above. The figures are as follows:

Teasing and bullying: boys, 19 compositions (28.4 per cent.); girls, 19 compositions (22.6 per cent.).

Farce Comedy: boys, 18 compositions (26.9 per cent.); girls, 16 compositions (19 per cent.).

Ridiculous and absurd: boys, 11 compositions (16.4 per cent.); girls, 23 compositions (27.4 per cent.).

Pun: boys, four compositions (5.9 per cent.); girls, six compositions (7.1 per cent.).

Character: boys, seven compositions (10.4 per cent.); girls, six compositions (7.1 per cent.).

Story with a point: boys, three compositions (4.5 per cent.).

Subtle turn: boys, three compositions (4.5 per cent.); girls, 11 compositions (13.1 per cent.).

Two of the compositions of the boys (2.9 per cent.) and three of the compositions of the girls (3.6 per cent.), written on these subjects, were devoid of any element of humor.

A study made of the compositions written in the fourth group on the subject "A Practical Joke," showed in the vast majority of cases (over 90 per cent.) for the boys, and to a great extent for the girls (nearly 70 per cent.) that humor manifested itself in the teasing and bullying instinct.

An analysis of the subject, "A Humorous Character," in group four, revealed the fact that a considerable number of pupils selected characters taken either from popular novels and stories or from well known impersonations on the stage. In the case of the boys three compositions (10.7 per cent.) were on Ichabod Crane, and in the case of the girls twelve (27.3 per cent.). One boy and one girl selected "Rip Van Winkle" as the subject for a composition. The elements of humor entering into these two characters seemed too complex for further analysis in reference to the quality which particularly impressed the writer of the theme. The remaining compositions, however, were placed under the following headings:

Victims or instigators of practical jokes: boys, 10 compositions (35.7 per cent.); girls, eight compositions (18.2 per cent.).

Countrymen and farmers: boys, eight compositions (28.6 per cent.); girls, 10 compositions (22.7 per cent.).

Foreigners: boys, two compositions (7.1 per cent.); girls, three compositions (6.7 per cent.).

Colored men: boys, one composition (3.6 per cent.); girls, four compositions (9.1 per cent.).

A witty companion: boys, two compositions (7.1 per cent.); girls, four compositions (9.1 per cent.).

One boy and two girls in writing on the topic "A Humorous Character" confused the subject with "A Humorous Incident."

The above figures show the large number of boys selecting the practical joke as the principal element entering into their conception of a humorous character, indicating again that the teasing and bullying instinct is strong in the male sex at this age. The number of girls who emphasized this element was considerably less, but doubtless the practical joke element in the story of Ichabod Crane was one of the causes which led to the choice of this story as a theme.

### (c) *Feeling.*

The attempt to analyze the elements of feeling in the last three sets of compositions proved extremely difficult because of

the complexity and variety of their nature, as well as the uncertainty of their expression. Hence no complete classification was attempted. The egoistic feelings came first for both boys and girls, the per cent. of the total for the former being 65.4 and for the latter 59.6. The positively altruistic and the non-egoistic feelings numbered 27.1 per cent. of the total for the boys, 38.7 per cent. for the girls. Neutral feelings stood at 7.5 per cent. for the boys and at 1.7 per cent. for the girls. The painful feelings far outnumbered the pleasurable for both sexes, the figures being for the latter only 15 per cent. in the case of the boys and 32.9 per cent. in the case of the girls. Painful feelings stood at 65.4 per cent. of the total for the boys and at 59.9 per cent. for the girls. The neutral and mixed feelings stood at 19.6 per cent. for the boys and at 7.2 per cent. for the girls. Mere bodily feelings formed 15.9 per cent. of the total for the boys and 16.1 per cent. of the total for the girls. Fear was found in 19.6 per cent. of the feelings expressed by the boys and in 15.2 per cent. of the feelings expressed by the girls. Pride was noted in 2.8 per cent. of the total for the boys and in 7.1 per cent. for the girls. Of the more exalted feelings the æsthetic formed 5.6 per cent. of the total for the boys and 13.5 per cent. for the girls. The religious feelings were practically absent from the compositions studied, being given expression in only one instance by the girls and not at all by the boys.

### § 5. Differences Between the Sexes.

From time to time during the discussion of the facts presented in the foregoing pages comparisons have been suggested between the boys and the girls as to their various interests and abilities. It now becomes necessary to consider more in detail these differences. In the first place it must be borne in mind that the period we are now discussing is that of early adolescence, and assuming that with the girls the onset of puberty is from a year to two years earlier than with the boys, it is probable that the former are in a higher stage of mental development than are the latter. Indeed, a considerable number of the boys may still have not passed the crisis from childhood to youth, while this is not the case to any extent with the girls. We should therefore expect a higher grade of ability from the girls than from the boys, and an examination of the data before us shows clearly that this is the case. When we consider the number of compositions above the third grade we see that in each group of compositions with the exception of the fourth, written a humorous topic, the girls surpassed the boys in inventive power, and in this one instance the difference is less than one per cent. in favor of the boys. When we consider the average grade, we notice that the girls excelled throughout. In formal correct-

ness the girls excelled in every instance. In the various elements contributing to inventive ability the girls likewise excelled, with the one exception of humor, where the boys surpassed the girls by more than eight per cent. It is in the variety and richness of the feeling element that the girls showed the most marked superiority over the boys. This would naturally be expected, if it is true, as has been assumed, that more of the girls than of the boys had entered into their adolescent development. It is to be noticed in the first place that more of the girls' feelings were positive, fewer being neutral, whether we class them under the heads of egoism and altruism, or of pleasurable and non-pleasurable. In altruistic feelings the girls decidedly excelled the boys, and in egoistic feelings they were behind. The pleasurable feelings were nearly twice as numerous with the girls as with the boys, while the unpleasant feelings were less in evidence. The great preponderance of the unpleasant feelings over the pleasant for both sexes is probably to be explained from the fact that the latter are more general, less definite and more difficult to express. It would certainly be an unwarranted conclusion that the painful psychoses were in excess. The positive character of pleasure seems to increase with adolescence, and this would account for the fact that the girls gave expression to pleasurable feelings much more often than did the boys. It is probably significant that the feeling of pride found expression far more often on the part of the girls than of the boys, and that the æsthetic were almost exclusively expressed by the girls.

In imaginative power the girls were superior to the boys in nearly every particular. The one marked exception was in what has been termed the scientific imagination. In the fifth set of compositions the theme making the least demands upon the constructive imagination, "The Adventures of a School Desk," was chosen in considerably greater proportion by the boys than by the girls, but with the theme, "An Original Story," requiring much higher inventive power, the reverse is true. Demanding perhaps the greatest originality of all the themes in the fifth group was the subject, "How the Flowers Got Their Colors." Twenty-one girls wrote on this topic and only four boys. The girls showed greater imaginative power in the theme, "A Fairy Story," than did the boys.

In perceptive ability, also, the girls were superior to the boys. They apperceived much oftener what was "newsy" and interesting in a situation; they described more vividly and accurately, and their sensations on the whole were keener.

In logical power the girls were likewise superior. If we accept the theory that the associational centers do not develop fully until puberty, this hypothesis would offer an explanation

for the girls' superiority in this respect. Doubtless this superiority would be found on further investigation to disappear in the later years of the high school course, when the full force of adolescent development is being felt by the boys.

An analysis of the elements of hnmor, already discussed, shows that while the boys were superior to the girls in their general apperception of humor, they were inferior in the more subtle forms. The boys showed a higher average in the humorous elements founded on the teasing and bullying instinct and in the farce comedy type. They showed but slight differences from the girls in their apperception for a humorous character or a pun; they were inferior in the perception of the incongruous, the ridiculous and the absurd, and clearly below the girls in their feeling for the more subtle and delicate forms of humor. In one particular they showed a marked superiority over the girls, and that was in the ability to narrate a story with a point. Although the boys succeeded in doing this in a number of instances not one girl was successful.

## § 7. The Relation Between Inventive Ability and Formal Correctness.

While it may be conceded that inventive ability is capable of stimulation, and that spontaneity and originality may be cultivated to a degree, the objection may be raised that this can be done only at the expense of accuracy in writing. It may be urged that the more attention the writer puts on the content the less he is able to put on the form, and that in calling forth spontaneous expression rhetoric and grammar are sacrificed. In replying to this objection it becomes necessary to discuss the relation of inventive ability to formal correctness, as brought out in the study of the five sets of compositions which have formed the subject matter of this paper. Tables from I to X inclusive, contain, as has been said, a tabulation of the grades of formal correctness and of inventive power as these two elements are related to each other in each of the five groups of compositions examined. If we examine these tables, we find that in 51.9 per cent. of the cases the maximum figures in each grade of formal correctness and in each grade of inventive ability coincide, and in a large majority of the cases there is an approximation if not a coincidence. Examining the totals for each grade in the ten tables, we see that with the exception of tables four and six the maximum figures for formal correctness correspond with the maximum for inventive ability. In Table I 55.4 per cent. of the compositions had the same grade in formal correctness and in inventive power; in Table II the per cent. was 39.1; in Table III, 43.8; in Table IV, 41.7; in Table V, 66.8; in Table VI, 60.1; in Table VII, 62.2; in Table

VIII, 65; in Table IX, 47.6; in Table X, 59.7. This gives an average for the ten tables of 54.1 per cent. of the cases in which there was an exact agreement between formal correctness and inventive power. When we further consider that where there was not an exact agreement, there was an approximation in most cases, we can reasonably conclude that there is a close relation between these two elements in written discourse, and that the two are dependent variables. The more important question, however, remains: Is there any direct causal relation between these two elements? Does an increase in formal correctness cause an increase in inventive ability, and does an increase in inventive ability tend to improve formal correctness, or are the variations in these elements controlled by a cause that lies behind them both? The supposition that an increase in formal correctness directly causes an increase in inventive power seems hardly justifiable, since processes contributing to inventive ability precede its expression. It is difficult to imagine how a mere correctness in the expression of a psychic state could in any way influence the state itself. On the other hand may it not be reasonably assumed that the character of an affective, intellectual or conative state determines somewhat the form in which that state shall seek expression, and that if we succeed in stimulating the elements of inventive ability, we shall likewise succeed in improving the mode in which those elements find expression? The present paper, however, does not leave this important problem to mere speculation, but enables us to answer this question somewhat conclusively.

It is to be remembered that the compositions in groups one and two were written for the most part by the same pupils, while the compositions in groups three, four and five were written by another set of pupils. A comparison between the first and the second groups, and between the third, the fourth and the fifth groups, as to the relation between formal correctness and inventive ability, should therefore be of importance. As has already been stated, the second set of compositions showed an increase in inventive power over the first set, both for boys and girls, whether we consider the per cent. of compositions above the third grade or the average grade. There was also a corresponding increase in formal correctness. Since the second set of compositions was intended to stimulate inventive power, and not directly formal correctness, and since these compositions were written primarily to be read in the class and not to be criticised from a grammatical and rhetorical standpoint, it seems fair to assume that the increase in formal correctness was due to an increase in inventive power. If we compare the remaining three sets of compositions written by the boys, we find that there is a progression in each set in inventive power,

which is paralleled by a corresponding increase in formal correctness. When we examine the compositions written by the girls we find that exactly the same thing is true, with the one exception of the average grade for formal correctness in the third and fourth groups. In the latter group the grade is 3.85 against 4.06 for the former. However, when we consider the average of the compositions above the third grade, the increase in inventive power is paralleled throughout by an increase in formal correctness. We therefore seem justified in concluding that stimulation of inventive power tends also to stimulate formal correctness. In other words, if we desire to have a composition well expressed, we should see to it that there is something to express.

## Conclusion.

Although the facts brought out in the above pages seem to warrant the conclusion that inventive power may be improved and spontaneity stimulated by the teacher directing the pupils' written work along the lines of his fundamental interests, it will doubtless be impossible to achieve the desired result in all cases. Like all mass studies the conclusions reached by this paper do not necessarily apply to each individual, and according to the writer's personal experience there will always be a considerable number to whom they will not apply at all. Most classes in English fall into three divisions. First there are those incapable of any real productive effort. With such it is probably a waste of time to attempt to do more than merely to secure the best formal expression possible. Rhetorical and grammatical correctness is all that should be aimed at in such cases. But there is a second division, who, largely because of previous training in written work, have divorced spontaneity from expression. These should be encouraged to give voice in their compositions to their real thoughts, fancies and emotions. There is a third division who take a genuine pleasure in writing, and they express themselves well because they have something to express. They should be given every encouragement to originality and not be made to feel, as is often the case, that the teacher is a hostile rather than a sympathetic critic.

In composition at least, the same amount and the same grade of work should not be expected of every pupil. Here, if anywhere, individual instruction should be the ideal. We should not check the effort of a dull pupil by demanding an amount of written work that will discourage him, neither should we hold back the bright pupil by bringing him down to the standard of the dull or mediocre. It is advisable to encourage the pupils to write, but not always safe to compel them to write when they have nothing to write about. For this reason daily

themes may be out of place, particularly in the first years of the high school course. Perhaps one formal theme a week is enough to demand of the class as a whole, especially when such themes are supplemented by brief productions intended solely to call forth spontaneity. Correction, while necessary, should be reduced to a minimum. Not every refinement of rhetoric should be emphasized at the start. There are a certain number of gross mistakes that the majority of pupils are sure to make, and these should be dealt with heroically. The experienced teacher knows in advance what they are likely to be. Further, there are mistakes peculiar to certain pupils. A list of such errors should be kept by the teacher, and these faults should be dealt with individually, not discussed before the class as a whole; for such a procedure is not only a waste of time, but opens the way to the evil of negative suggestion. Certain themes should be prepared to be read in the class, and in these the pupils may be allowed to select subjects without specific directions from the teacher. The logical faculty is best cultivated by making the pupil realize that a composition is a unit, developed from a central idea; and this is sure to be no small task with boys and girls fresh from the grammar grades, where the emphasis has been largely on the sentence, and not on the composition as a whole.

Most teachers of composition in the secondary school are teachers of literature as well, and may be able to accomplish much in calling forth originality indirectly. It is but a step between the active enjoyment of a literary masterpiece and invention. To vitally participate in an author's thoughts, feelings and desires; to really see what he describes, and to experience what he narrates make demands of the creative imagination. This active participation in literature the teacher can stimulate, but for the most part only indirectly. It is often the modulation of the voice, the gesture, the expression of the face that helps the pupil to see or feel what pages of commentary and hours of analysis fail to reveal. To leave some things unsaid is an important pedagogical rule. Less time should be spent on textual criticism, and more on developing the pupils' perceptive powers. Often the entire meaning and enjoyment of a literary masterpiece is lost because he fails to perceive. The present study has shown that most pupils of the high school age are sadly lacking in perceptive power, at least when they come to write. Yet with the onset of puberty often comes an increased keenness of the senses, as well as heightened feelings and imagination. It should be the aim of the teacher to make the pupils alive to the realities of the printed page, lest they shall have eyes and see not and ears and not hear.

But it may be objected that this attempt to develop written

work along the lines of originality and spontaneity lacks the definiteness which the long established dry-as-dust methods possess, and if by this is meant the definiteness of turning over the pages of the dictionary, of the constant consulting of the grammar and rhetoric for the violation of logical rules, the criticism is just. There is, however, another and a higher kind of definiteness, a definiteness in the mind of the teacher as to the working of the minds of her pupils, and a definiteness as to her own aims and methods in bringing her instruction down to their apperception. Nowhere is a definiteness of this sort more needed than in the teaching of English. It is biology not thanatology that we seek; the living spirit is superior to the dead form.

But finally it may be said that it is not the business of the school to call forth this spontaneity, and that it is of little importance for the average pupil, who can never expect to be more than a mediocre writer at the best. If we consider the matter carefully, however, we should be convinced that anything which tends toward unreality in our schools is bad. It should be a matter of importance to have the pupil's expression correspond with his thoughts and feelings. If by our instruction we lead the pupil to conceive written language as entirely separated from the reality of his vital experiences, are we not offering a training in sophistry? Such a procedure is not only negatively but positively bad. The question has not only a pedagogical but an ethical bearing as well.

# THE VOCABULARIES OF THREE CHILDREN IN ONE FAMILY AT TWO AND THREE YEARS OF AGE.

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The following vocabularies of the three oldest children of Professor W. M. West, professor of History in the University of Minnesota, and the late Mrs. West, were taken as the children were successively two years old in Oct., 1884, July, 1886, and April, 1888. The oldest child was again taken at three years of age. The work was chiefly done by Mrs. West (who had been a High School teacher), who began about a month before each of these birthdays to note down, as far as time and opportunity permitted, all the different words she heard the child use. She then made an alphabetical list of all the words so as to check off reduplications. Proper nouns were not recorded, nor were declensions or inflections unless they were from different stems. As Mrs. West was almost constantly with the child she probably heard most of its vocabulary for the month preceding its second birthday; but both the parents believed that it was impossible with this method to get down all the different words used.[1]

The work was done without the knowledge of the few summaries of children's vocabularies published at that time, and was undertaken for the purpose of testing the suspectedly small figures which philological rumor ascribed to children's words. Having by this family study satisfied themselves that their suspicions were justified and that such guesses had largely underestimated the verbal outfit of children, Professor and Mrs. West made no further use of their valuable material. During the years of the preservation of these vocabularies in

[1] Professor West himself adds the following comment. "Mrs. West was almost constantly with the child, but both parents realized that it was impossible with so imperfect a method to get down all the words used. An approximate result was all that was aimed at; and, as will be seen below, no word or form was recorded, if, upon any principle of criticism, it could be left out. For the third year vocabulary in particular Mrs. West was aware that the list was very incomplete, and that with more time for observation and more leisure for recording results, a much larger number of words would have been secured. This list was never regarded by either parent as a satisfactory representation of the child's three-year vocabulary."

the family archives several of the first pages, containing all words beginning with a, b, and c, of Ruth's two-year list have unfortunately been lost. So it must be remembered that in each of the following parts of speech Ruth's two-year old vocabulary does not begin until the letter d. This loss is compensated for in the table by the fortunate fact that her total number of words had been preserved and by the comparisons being made in percentages.

The compilers have classified the vocabularies under the parts of speech and combined them in the following manner. The following list of words, exclusive of those in italics, is the recorded vocabulary of the oldest child, Ruth, at three years. All words followed by "Rh," are those which Ruth also used previously at two years. The few in italics and followed by "*Rh.*" are words used by Ruth at two years but not at three years. All words, whether in Roman or Italic type, which are followed by a Roman "R," are those used by the second child Rodney (boy). His vocabulary is completed by the few words in italics and followed immediately by an Italic "*R*," which are words used by him and not by Ruth. Similarly all words followed by a Roman "M" are those used by the third child, Margaret, at two years; while words used by her alone, and not by Ruth or Rodney, are in italics and followed immediately by an Italic "*M.*" Thus "doll, Rh. R. M." means that doll was used by Ruth at three and two years, by Rodney and Margaret at two years; "*duck. Rh.* M." means that duck was used by Ruth at two years, but not at three years, and was also used by Margaret; "*harness R.* M." was first used by Rodney, also by Margaret afterwards, but not previously by Ruth; "*hail M.*" was used only by Margaret.

NOUNS.

acorn.
afghan. M.
afternoon. M.
album.
alley.
animal.
ankle.
apple. R. M.
apple sauce.
apron M.
arm. M.
aunt.

baby. R. M.
back. M.
backbone.
bag.
*bank. M.*
ball. R. M.
banana. R. M.
banks.
barn. R.
barrel. M.
basin.
basket. M.
bath. R. M.
bay window.
*bead. R.*
beans.
*bear. M.*
beauty.
bed. M.
bedroom.
bee. M.
beef.
*bell. M.*
berry. R.
bib. R. M.
Bible.
bicycle.
bird. M.
birthday. M.
biscuit.
bit.
bittersweet.

blackberry.
blinds.
block. R. M.
*blanket. M.*
blueberry.
bluebird.
bonfire. M.
board.
boat.
bone. M.
bonnet. M.
*book. R.* M.
*bookcase. M.*
bouquet.
border.
boy. R. M.
bowl. M.
bow. M.
bottle. M.
*box. R.*
bread. R. M.
breakfast. M.
broth. R.
brother. M.
brother-in-law.
broom. M.
bubble.
buds.
bureau.
buggy.
*bushel. M.*
bush.
butter. R. M.
butter-cup.
butter-nut.
button. R. M.
button-hole. M.
butter-plate. M.
button-hook.

cage.
can.
cake. R. M.
calf.
caller.
camp.
candy. M.
cane.
cap. M.
cape.
camel.
car.
*cars. M.*
card. M.
carpet. M.
carriage. R.
cat. R. M.
cat-tails.
*ceiling. M.*
celery.
cellar. R.
cent.
circus.
cistern.
chain.
*chatterbox. M.*
chair. R. M.
chalk.
checkers.
cheek. M.
chess.
cherry.
chicken. M.
*children. M.*
child.
chip.
chocolate.
chin. M.
Christmas.
church.
class.
cloak. M.
clock. R. M.
closet.
cloth. M.
clothes. M.
clothes-pin.
clothes-line.
cloud.
clover.
coal. M.
coat.
collar. M.
color.
colt.
cocoanut.
coffee. M.
coffee-pot.
cookie. R. M.
cook-book.
corner.
*corn. R.* M.
cork.
course.
court-house.
cousin.
comforter.
company.
cow. R. M.
cracker.
cradle. M.
cranberry.
*cranberries. M.*
cream M.
crib. M.
crochet-needle.
croquet.
crumb. M.
crumb-cloth. M.
crust. M.
curls.
curtain. M.
cushion.
cup. R.

daisy.
damper.
dandelion.
darling. Rh. M.
day. Rh.
daughter. Rh.
death.
deer.
depot. Rh.
desk. Rh. M.
dessert.
dew.
*diaper. Rh.* M.
dictionary. Rh.
*dice. Rh.*
dimple.

dining-room. Rh.
dinner. Rh. M.
dirt. Rh. M.
dish. M.
*dishes. Rh.*
dish-pan.
ditch.
doctor.
dog. Rh. M.
doll. Rh. R. M.
dollar. Rh.
domino. Rh. M.
donkey.
door. R. M.
*doors. Rh.*
door-knob.
dough.
dove.
drawer. Rh. M.
drawers. Rh. M.
dress. Rh. M.
dressmaker.
drink. Rh. R. M.
*duck. Rh.* M.
dust. M.
*dustpan. Rh.*
dye.

ear. Rh. R. M.
east.
egg. Rh.
*eggs. M.*
elbow.
elephant.
embroidery.
end.
envelope.
evening.
eye. Rh. R. M.
eyelid.

*face. Rh.* M.
*faces. M.*
fan. Rh.
father. Rh. M.
*feather. M.*
fellow. Rh. M.
fence. M.
fern.
fiddle.
finger. Rh. M.
finger-nail. Rh.
fire. Rh. M.
fish. Rh. M.
flag.
fleece.
floor. Rh. M.
flower. Rh.
flower-bed.
*flowers. M.*
flour.
fly. Rh. M.
folks. Rh.
food.
foot. Rh. M.
forehead. M.
fork. Rh.
frame.
friend.
frog. Rh.
front.
frosting.
fruit.
fruit-knife.
fuchsia.
fun. Rh. M.
fur.

garden.
*garter. Rh.* R. M.
garters.
gate. M.
gentleman.
geography. Rh.
geranium.
gingham.
girl. Rh. R. M.
glass. Rh. M.
glasses. Rh. M.
glove.
*gloves. Rh.*
gold.
goose. Rh. M.
gooseberry.
*greatgrandma. Rh.*
grandma. Rh.
grandpa. Rh.
grape. Rh.
*grapes. M.*
gravy. Rh.
griddlecake. Rh.
grocer.
grocery.
grass. Rh. R. M.
ground. Rh.
guitar.
*gum. M.*

*hail. M.*
hairpin. Rh.
hair. Rh. R. M.
half.
hammer.
hammock. R.
handkerchief. Rh. M.
hand. Rh. R. M.
handful.
handle. M.
*harness. R.* M.
harp.
hash. M.
hatchet.
hat. Rh. R.
hay. R. M.
headache.
*head. Rh.* M.
heaven.
heel.
hen. M.
hiccough. Rh. M.
hill. R. M.
high chair. Rh. M.
hoe.
holder.
hole. M.
home. R.
honey.
hour.
house. Rh. M.
hood. M.
hook.

horse. Rh. M.
hops.
husband.

ice. R.
*iceman. R.*
ink. Rh.
institution.
iron. Rh.

jackstraws.
jackstones.
jar.
jelly. Rh. M.
joke.
jug. M.

key. Rh.
keyhole.
kindergarten.
kitchen. Rh. M.
kitten.
kitty. Rh R. M.
knee. Rh. R.
*knees. M.*
knife. Rh. M.
knot.

lace. Rh.
lady. Rh. R. M.
lake.
lamb.
lamp. Rh.
*lap. Rh.* M.
leaf.
leaves.
*legs. M.*
leg. Rh.
*leggins. M.*
lemon. Rh. M.
lemonade. Rh.
lesson.
letter. Rh. M.
letters.
lily.
light. Rh. M.
lightening.
lion.
*lips. Rh.* M.
locket.
loaf.
log.
looking-glass.
lot.
*lots. Rh.* M.
lounge. Rh. M.
lunch.

*macaroni. M.*
machine.
mamma. R. M.
man. Rh. R. M.
ma'm.
marble.
marmalade.
mat.
match. Rh.
*matter. M.*
*meal. M.*
meat. Rh. R. M.
medicine. Rh. M.
melon.
meeting.
mill. Rh.
milk. Rh. R. M.
milkman.
minute. Rh. M.
mischief.
Miss. Rh. M.
mitten. Rh.
*mittens. M.*
moccasins.
morning. Rh.
mother. Rh.
money. Rh. M.
moon. Rh.
mop.
mouse. Rh. M.
mouth. Rh. M.
mouth-organ.
mouthful.
mountain.
Mr.
Mrs. Rh.
*mud. Rh.*
mud-puddle.
*muffin. M.*
mug.
music.
mosquito. Rh.
mutton.

nail.
nap. Rh.
napkin. Rh. M.
napkin-ring. M.
*name. Rh.*
neck. Rh. M.
necktie. Rh. M.
needle. M.
negro.
neighbor.
newspaper.
nest. M.
niece. Rh.
night. Rh. M.
nightdress.
nightcap.
*nightgown. Rh.* M.
noise. Rh. M.
*noon. M.*
nose. Rh. R. M.
nuisance. M.
nut.

oak.
oatmeal. Rh.
o'clock.
office.
oil.
oil can.
omelet.
*orange. Rh.* M.
*organ. M.*
ornament.
oven. M.
overcoat.
overshoe.
*overshoes. M.*
oyster.

pain. Rh. M.
pan. Rh.
papa. Rh. R. M.
pail. R. M.
page. Rh.
pansy.
pantry.
paper. Rh. M.
paper-rag.
paper-knife.
parasol. R.
parlor. Rh. M.
path.
part.
*party. Rh.* M.
*pasture. R.*
pattern.
pea. R.
peas.
peach. Rh.
peanut.
peapod.
pen.
pen-knife.
pencil. Rh. M.
penny. M.
pear. Rh.
people. Rh.
pepper. R.
peppermint.
person.
petticoat. Rh.
photograph.
picture.
piano. Rh.
picnic.
piazza. M.
pie. Rh. M.
*picture. M.*
*pictures. Rh.*
piece. Rh. M.
*pigs. Rh.*
pig. R. M.
pillow. Rh. M.
pin. Rh. M.
pincushion.
*pills. M.*
pipe.
pitcher. Rh. M.
place. M.
plaything.
*plaster. M.*
plate. Rh. M.
plumb. Rh.
pocket. Rh. M.
pocket-book.
poem.
polish-boots.
pond-lily.
post-office.
poppy.
potato. Rh. R. M.
poker. M.
porch.
present. Rh.
pudding. Rh. M.
pumpkin.
pump. Rh.
puppy. Rh.
purpose.

question.
quilt.

rabbit. Rh. M.
rag-bag.
rag.
rake.
railing.
railroad.
rain. Rh. M.
rainbow. M.
rattle. Rh.
raspberry.
rat. Rh. M.
reason.
register. M.
rest. Rh.
rheumatism.
ribbon. Rh. M.
rice. Rh. M.
ride. Rh. R. M.
ring. Rh. M.
river. M.
road.
robin.
rocking-chair. Rh. M.
roast.
roller-skate.
rogue. M.
room. M.
*roof. M.*
rooster M.
rose.
row.
rubber. Rh. R.
rubbers. M.
rug. M.
salt. Rh. R.
sand. Rh.
satchel. Rh.
satin.
saucer. Rh. M.
sacque. Rh.
scarf. M.
scholar.
school. Rh.
schoolhouse. Rh.
scissors. Rh. M.
seat.
seed.
self. Rh.
shade.
shadow. M.
shawl. Rh. R. M.
sheep. Rh. M.
sheet.
shell.
shelf.
shears.
ship. Rh.
shirt. Rh. M.
*shoe. Rh.* R. M.
shoes.
shop.
side. Rh. M.
sidewalk.
sieve.
silk.
sir.

*sister.* *Rh.* M.
sled. Rh. M.
sleep. Rh.
*sleeve.* *Rh.* M.
*slipper.* *M.*
slippers. Rh.
shower.
skin.
skirt. Rh. M.
*skies.* *M.*
sky. Rh. M.
smoke. Rh.
snow. Rh. M.
snowball. M.
soap. Rh. M.
sofa.
sofa-pillow.
son.
song.
soup. M.
*sound.* *Rh.*
spool. Rh. M.
spot. M.
spoon. Rh. M.
spoonful.
spoon-holder.
spread.
squash.
squirrel.
stairs. Rh. R. M.
stick.
steak.
steps. M.
steeple.
stool.
*stocking.* *Rh.* M.
stockings. R.
store.
story. Rh. M.
stomach. M.
stone. Rh.
storm.
stove. Rh. M.
straw.
strawberry.
street.
string. Rh. M.
strap.
sugar. Rh. R. M.
sugar-bowl.
*summer.* *Rh.*
sunday-school. Rh.
*summer-house.* *M.*
sun. Rh. M.
*sunset.* *M.*
supper. Rh. M.
suit.
swan.
swing. R.
syrup. Rh. M.

table. Rh. M.
table-cloth. Rh. M.
tack. Rh. M.
tail. Rh.
teacher.
tea. Rh. M.
teapot. M.
*teaspoon.* *Rh.*
*tea-kettle.* *M.*
tears. Rh.
*tear.* *M.*
teeth. Rh. M.
tent.
thanks.
Thanksgiving.
thimble. Rh. M.
thing. M.
*things.* *Rh.*
thistle.
thread. Rh. M.
throat. M.
thunder.
thumb. Rh. M.
tiger.
time. Rh. M.
ticket.
*toes.* *Rh.*
toad. R.
toast. Rh. M.
tomato.
tongue. Rh. M.
toothbrush.
toothpick. Rh. M.
top.
toy.
towel. Rh. M.
town. M.
*tree.* *Rh.* M.
trees.
trouble.
trousers.
trumpet.
*trunk.* *Rh.*
trunks.
*tub.* *Rh.* M.
tulip.
tumbler.
turnover.

umbrella.
uncle. Rh.
use.

veil.
velvet.
vest. Rh.
vine.
violet.
visitor.
volume.

wagon.
waist. Rh.
wall. M.
wash-rag. M.
wash-woman.
washbowl. M.
washboard.
watch. Rh.
wash-stand.
water. Rh. R. M.
way. M.
*ways.* *Rh.*
watermelon. Rh.
water-works.
week.
west.
whole.
wheel. M.
whip. Rh. M.

whiskers. Rh.
whistle. Rh. M.
whooping-cough. Rh.
wife.
*wind.* *Rh.* M.
window. Rh. M.
wing.
*wings.* *M.*
wire.
woman.
woodpile.
wood. Rh. M.
woodbine.
woodbox. Rh.
word. M.
work. Rh. M.
*world.* *M.*
woods.
woodpecker.
wool.
workman.
*wrapper.* *Rh.* M.
wreath.
wren.
wrist.

yard.
yarn. Rh.
year.
yolk.

zinc.

VERBS.

ache. M.
act.
am. M.
answer.
are. M.
ask. M.

bake.
bark.
been.
begin.
believe.
*bet.* *M.*
*bit.* *M.*
bite. M.
*bleed.* *M.*
blow.
borrow.
bother.
braid.
*break.* *M.*
bring.
brush. M.
build. M.
bump. M.
burn. M.
buy. M.
buzz.

calls.
call. M.
can. M.
care. M.
carry. M.
catch.
change. M.
chew. M.
choke.
choose.
clap.
comb. M.
come. R. M.
cook. M.
cool. M.
cough. M.
count. M.
could.
cover. M.
crack.
crawl.
creep.
crochet.
cry. M.
curl.
cut. M.

dance. Rh.
die.
do. Rh. M.
*don't.* *Rh.* R.
draw.
drive.
*drop.* *Rh.* M.
drown.

eat. Rh. M.
embroider.
enjoy.
excuse. M.
explain.

fall. Rh. R. M.
fasten.
feed. Rh. M.
feel.
fight.
fill.
find. Rh. M.
fit.
fix. Rh.
fly.
fold.
follow.
fool.
forget.
*freeze.* *M.*
frighten.
fuss.

get. Rh. M.
give. Rh. M.
go. Rh. R. M.
*got.* *Rh.*
groan.
grow.
grunt.
guess. Rh. M.

hang.
have. M.
hear. Rh. M.
help. Rh. M.
hide.
hit. Rh. M.
*hitch.* *R.*

hold. M.
hop.
hug. Rh.
hurry.
hurt. Rh. M.
hush.

is. Rh. M.

jump. Rh.

keep.
*kick. M.*
kiss. Rh. R. M.
*kneel. M.*
knit.
knock. M.
know. Rh. R. M.

laugh. Rh. M.
lead. M.
leave.
learn. M.
left.
let. Rh. M.
lie. Rh. M.
like. Rh. M.
lighten.
live.
listen.
lock.
look. Rh. M.
lose. M.
love. Rh. M.

make. Rh. M.
mark.
mash.
may.
*mean. M.*
meet. Rh.
mend. M.
mew. Rh.
might.
mix.
mind. M.
move. Rh. M.

must. Rh. M.

need. M.

paint. M.
pat. Rh. M.
pet. Rh.
pick. Rh. M.
pile.
pinch. Rh.
*play. Rh.* M.
poke. M.
pound. Rh.
*pour. Rh.* R.
prick. Rh.
pull. Rh. M.
push. Rh. M.
put. Rh. M.

quack. Rh.

raise.
reach. Rh.
read. Rh. M.
remember. M.
rise.
roar.
rock. Rh. R. M.
roll. Rh. M.
rub. Rh. R. M.
run. M.

scare.
say. Rh. M.
scold.
scrape.
scratch. Rh. M.
send.
scrub. Rh.
*seem. Rh.*
*see. Rh.* R. M.
set. M.
sell.
sew. Rh. M.
shall. Rh. M.
should.
shake. M.
shave.
sharpen.
shove.
shut. Rh. R. M.
*shine. Rh.*
show. Rh. M.
sift.
sing. Rh. M.
sink.
sit. Rh. R. M.
slam. Rh.
*slap. Rh.*
skate.
slide. M.
*slip. M.*
smell. Rh. M.
smile.
sneeze. Rh. M.
speak. M.
soil.
squeak.
squeal.
spank. Rh. M.
*spill. Rh.* M.
split. Rh.
*spatter. Rh.*
stand. Rh. R. M.
stay. Rh. M.
steal.
step. Rh.
stir. M.
sting. M.
*stop. Rh.* M.
*stretch. Rh.*
study.
*suppose. M.*
swell.
sweep. Rh. M.
swallow.

take. Rh. M.
talk. Rh. M.
taste. M.
teach. M.
*tease. M.*
tear. Rh. M.
tell. M.

*thank. M.*
think. Rh. M.
tie. R. M.
tick.
tickle. Rh. M.
throw. Rh. R. M.
*tip. Rh.*
*touch. M*
treat.
trot. Rh.
try. Rh.
tumble. M.
turn. Rh.
tweet.

visit.

unbutton.
understand. M.
undress. Rh.
unlock.
use.

wait. Rh. R. M.
walk. Rh. M.
wake. Rh.
want. Rh. M.
was.
wash. Rh. M.
wear.
welcome.
went. Rh. M.
whisper.
will. Rh.
wind. Rh. M.
wink.
*wipe. Rh.* M.
wish. Rh. M.
wonder. Rh.
*won't. Rh.*
would.
write. Rh. M.

yawn. Rh.

ADJECTIVES.

able.
afraid. M.
alike.
all. R. M.
alone.
another. M.
any. M.
asleep. M.
ashamed.
astonished.
awake. M.

bad. R. M.
barefoot.
beautiful.
*better. M.*
*best. M.*
big. R.
bitter.
black. R.
blue. R.
blind.
both. M.
*broken. M.*
brown.

careful. M.
cheap.
clean. M.
cloudy.
cold. M.
colored.
comfortable.
cross. M.
cunning. M.
cute. M.
dark. Rh. R. M.
deaf.
*deaf and dumb. M.*
dear. Rh. M.
dirty. Rh. M.
*done. Rh.*
dry. Rh. M.
dumb.
dusty. M.

early.
easy.
else. Rh. M.
empty.
*either. M.*
enough. Rh. M.
every. M.

fat. Rh. M.
few.
first.
first-rate.
five.
four.
*frightened. M.*
full.
funny. Rh. M.
fussy.
German.
glad. M.
*going. Rh.*
good. Rh. R. M.
*gone. Rh.*
gray.
great.
green.

*hard. Rh.* M.
heavy. Rh.
hot. Rh. R. M.
hungry. Rh.
industrious.
kind.

lame.
*last. M.*
lazy.
late.
*like. M.*
little. Rh. M.
lonesome.
long. M.
low.
lovely.
loud.

mad.
many. M.
mistaken.
much. Rh. M.
muddy.
more. R. M.
most.

narrow.
naughty. Rh. R. M.
near.
new. Rh.
next. Rh.
neat. Rh.
nice. Rh. M.
noisy.
Norwegian.

old. Rh.
one. Rh. R. M.
open. Rh. R. M.
other. Rh. M.
overhead.
own. Rh. M.

past.
poor. Rh. M.
*precious. M.*
pretty. Rh. M.
purple.

quiet. Rh.

rather.
ready. Rh.
*real. M.*
*red. R.*
right. Rh. M.
ripe.
*r*otten.
r*ound. R.*

sharp.
short.
sick. Rh. M.
silver.
sleepy. Rh. M.
*slippery. M.*
some. Rh. M.
sore. Rh. M.
sorry. Rh. M.
sour. Rh.
soft. Rh. M.
sticky. Rh.
sweet. Rh. M.
strong.
straight.
still. Rh. M.
stupid.
smart. Rh.
smooth.
*snowy. M.*
sure. M.
*surprised. M.*

thirsty.
thick.
tin.
tidy.
two. Rh. R. M.
tight. M.
tired. Rh. M.
three. R. M.

warm. M.
wet. Rh. R. M.
well. Rh. M.
white. Rh.
whole.
wide.
wise.
woolen.
*wrong. Rh.*
yellow. Rh.

ADVERBS.

almost.
along.
again. M.
anywhere. M.
*anyway. M.*
away. R. M.
awful. M.
badly.
*back. R.*
certainly.
down. Rh. R. M.
ever.
everywhere.
far. M.
fast.
forth. Rh.
*hardly. M.*
here. Rh. M.
high. Rh. M.
how. Rh. M.
just. M.
maybe. M.
never. M.
nicely.
no. Rh. R. M.
not. Rh. M.
now. Rh. R. M.
off. Rh. R. M.
*once. M.*
*only. M.*
over. Rh. M.
out. Rh. M.
outside.
partly.
perhaps. Rh. M.
quick. Rh.
quite. Rh.
*really. M.*
slow. Rh.
so. Rh. M.
sometime.
*sometimes. M.*
somewhere. M.
softly.
soon. Rh. M.
surely.
then.
there. Rh. M.
too. Rh. M.
to-day. Rh. M.
to-night.
*together. Rh.*
*to-morrow. M.*

undoubtedly.
up. Rh. R. M.
very. Rh. M.
when. Rh. M.
where. M.
why.
yesterday. Rh.
yes. Rh. R. M.
yet. Rh. M.

PRONOUNS.

anybody. M.
anything. M.
everybody.
everything.
he. M.
his. M.
him. M.
her. M.
herself. M.
himself. M.
I. Rh. M.
it. Rh. M.
me. Rh. M.
my. Rh. M.
myself. M.
our.
she. M.
somebody. Rh. M.
someone.
something. Rh. M.
their.
they. M.
this. Rh. M.
that. Rh. M.
these. M.
those. Rh. M.
them. M.
*themselves. M.*
who. Rh.
us.
what. Rh. M.
which.
we. M.
you. Rh. M.
*yourself. M.*

PREPOSITIONS.

*about. M.*
after. M.
around. M.
at.
before. M.
behind.
beside. M.
by.
for. Rh. M.
from.
in. Rh. R. M.
inside.
of. Rh. M.
on. Rh. R. M.
to. Rh. M.
through. Rh. M.
under. Rh. M.
with. Rh. M.

INTERJECTIONS.

goodbye. Rh.
goodnight. Rh.
goodmorning.
holloa. Rh. M.
hurrah. Rh.
oh. Rh.
peek-a-boo. Rh.
please. Rh. R. M.
thank you. Rh.
whoa.

CONJUNCTIONS.

and. R. M.
as.
because. M.
before.
if. M.
*or. M.*
*though. M.*
until.
while. Rh. M.

ARTICLES.

a. M.
the.

The following table gives a statistical summary and percentage comparisons of each of the four vocabularies of the words used by each child exclusively, of the words used by Ruth and Margaret in common, and of words used by Ruth at two years but not at three years.

The first interest in the table is the larger number of words in the two year old vocabularies of the two girls, 614 for Ruth and 578 for Margaret, than has usually been credited to children and the near approximation of these results to our own experience and study.[1]

[1]As published in our study on "The Vocabularies of Three Children of one Family to two and a half years of age," in Psychological Studies by Harlow Gale, July 1900, pp. 70–118, also printed separately. See also the letter of Milicent Shinn on Vocabularies in the Child-Study Monthly and Journal of Adolescence, April 1901, pp. 398–401.

| | Ruth, 3 yrs. | Ruth, 2 yrs. from d. | Rodney, 2 yrs. | Marg. 2 yrs. | Ruth, at 2, not 3. | Ruth, at 2, and not Marg. | Rod. alone. | Marg. and not Ruth at 2. | Ruth, 2, and Marg. from d. | Marg. Vocab. from d. |
|---|---|---|---|---|---|---|---|---|---|---|
| Nouns | 675 57.4% | 232 53.2% | 69 60% | 293 50.7% | 35 | 88 | 6 | 79 | 134 | 221 |
| Verbs | 238 20.2% | 99 22.7% | 17 14.8% | 129 22.3% | 16 | 32 | 1 | 32 | 68 | 100 |
| Adjectives | 141 11.9% | 49 11.2% | 17 14.8% | 69 11.9% | 4 | 17 | 1 | 18 | 34 | 52 |
| Adverbs | 53 4.5% | 27 6.2% | 8 6.9% | 38 6.6% | 1 | 6 | | 12 | 21 | 33 |
| Interjections | 10 0.8% | 8 1.8% | 1 0.9% | 2 0.3% | | 6 | | | 2 | 2 |
| Pronouns | 33 2.8% | 12 2.7% | | 27 4.6% | | 1 | | 14 | 11 | 25 |
| Prepositions | 17 1.4% | 8 1.8% | 2 1.7% | 13 2.2% | | | | | 8 | 8 |
| Conjunctions | 7 0.6% | 1 0.2% | 1 0.9% | 6 1% | | | | 3 | 1 | 4 |
| Articles | 2 0.1% | | | 1 0.1% | | | | | | |
| Total | 1176 | 436 614 *Total* | 115 | 578 | 56 12.8% | 150 34.4% | 8 7% | 158 35.5% | 279 64% of Rh. 62.7% of M. | 445 |

With the additions of proper nouns and of *all* inflections and declensions (not merely those from different stems, as was Professor and Mrs. West's rule), together with the increment which would probably have been found by the additional method of taking down all the words spoken during a day, the totals would have been brought up to very near our estimate of 700 words as a typical vocabulary of a two year old child.[1] (See our p. 101). The total of the boy, Rodney, the second child, of 115 words is evidently unusually low, being less than for any other reported boy except Preyer's.

[1]Judging from the proportion of proper nouns and plurals (the possessives and verb inflections from the same stem form no appreciable amount) in the two year old vocabularies of our second and third children,—respectively 17% and 12%,—an increase of 15% would make a probable addition of 92 words to Ruth's and 87 words to Margaret's two year old vocabularies. Professor West, however, is inclined to believe that with their very large circle of relations and friends his children's proper nouns would have been much larger than this estimate.

The nearly doubling of Ruth's vocabulary during the third year, 614 to 1,176, instead of during the first half of the third year, as we found, is somewhat and perhaps fully accounted for by the probably increasing proportion of words which were missed by their recording method as the vocabulary so greatly increased. (See Professor West's note on p. 422.)

The proportion of the vocabularies among the parts of speech add in general further evidence for Tracy's well-known table (see Psychology of Childhood, 5th Ed., p. 145), except that the nouns all run lower than his 60%, which deflection is balanced by a higher proportion of verbs and adjectives.

The very large proportion of words used by each of the girls exclusively, over one-third of their entire vocabularies, (the boy's vocabulary is too small to be considered in this regard), is most interesting. For, as both girls grew up in practically the same environment and were not very dissimilar in temperament and mental equipment, this is similar to the surprising result we found in our own two younger children and in the two older girls of Dr. E. S. Holden (see our pp. 110-112). Such a fact adds more evidence, it seems to us, to our inference as to the ease by which words are acquired through the pleasure-pain element of the word-sound forming the motor-speech association largely unconsciously. (pp. 114-116.)

# STUDIES OF INDIVIDUAL CHILDREN.

Reported by G. E. PARTRIDGE,
State Normal School, Mankato, Minn.

The facts for these studies were gathered from a group of about eighty children in the intermediate department of the Mankato State Normal School. The primary object was to get material for class work in individual child study, but this has led on to other interests in the material, and we are now trying to make as complete a study of the mental and physical differences of this group of children as the circumstances will allow.

The data already gathered consist of: —

(1) The results of a series of written lessons that were introduced into the regular language work of the children, and that include most of the studies made by Barnes and his students, besides some new ones of like nature, devised to bring out other mental traits.

(2) A collection of dated specimens of the regular school work of the children. For this purpose a large envelope is kept for each child, and into it is dropped anything that seems to be worth preserving. Thus far we have good collections of work in drawing, spelling, language, arithmetic, and history, with an occasional valuable observation from the teacher.

(3) Systematic observations, including a study of the children by a method adapted from the Bertillon system; a study of movements, habits, character, and temperament; mental traits as shown in class work, play; notes on health, attendance, home conditions, etc.

(4) Teacher's reports of the children; estimate of the mental capacity; incidental observations.

(5) A few tests and measurements that have been made upon the children individually.

One method has proved especially helpful in gathering material for a first survey of an individual. It has also been serviceable as an approach to psychological work in class.

A moderate sized dictionary was read through, and all words that can be used in describing characteristics of children mental and physical were culled out. Synonyms and unusual words were eliminated, and the remainder were classified roughly. A blank that was prepared by this method is given below.

### Child Study Outline.

This blank calls for a description of a child largely in terms of adjectives. Underline all terms describing qualities that the child under observation DISTINCTLY possesses. Underline twice if you think the quality is present in a striking or unusual degree.

Name of child.....Sex....Grade....Age..Nationality.....

Attendance: regular, irregular? Home conditions: good, poor? Health: good, poor? muscular strength: good, poor? Is the child tall or short (for his age), stout or slender, fleshy or thin, good looking or plain looking, well formed or poorly formed?

CHARACTER. Is the child good-natured, agreeable, well-disposed, contented, too good-natured, over-social, ill-natured, ill-disposed, disagreeable, irritable, sensitive, revengeful, jealous, complaining? Generous, obliging, selfish, disobliging? Affectionate, sympathetic, lacking in affection, cruel, a tease, a bully, over-affectionate? Obedient, disobedient, balky, willful, "tough," over-docile? Honest, frank, truthful, trustworthy, self-respecting, dishonest, sly, untruthful, without self-respect, mischievous, over-conscientious? Modest, confident, conceited, bold, proud, bragging, timid, bashful, babyish, self-depreciating? Earnest, ambitious, serious, cheerful, frivolous, "funny," over-talkative, a giggler, sad, over-anxious? Energetic, calm, self-controlled, quiet, nervous, excitable, emotional, lacking in self-control, restless, lifeless, lacking in energy? Refined, coarse, neat, untidy, over-fastidious, polite, impolite?

IN MENTAL WORK. Is the child industrious, lazy, patient, impatient, persistent, easily discouraged, attentive, inattentive, intense, listless? Quick, accurate, thoughtful, careful, slow, inaccurate, thoughtless, careless? Original, a memorizer, retentive, forgetful?

IN MANUAL WORK (*e. g.* drawing) Is the child accurate, skillful, quick, neat, quiet, careful, inaccurate, awkward, slow, untidy, noisy, careless? Are the child's larger movements (as in walking) quick, graceful, slow, awkward?

CLASS STANDING. Arithmetic: good, poor? Language: good, poor? Geography: good, poor? Nature Study: good, poor? History: good, poor? Reading: good, poor? Music: good, poor? Drawing: good, poor?

IN PLAY. Is the child rough, active, quiet, retiring, lifeless?

Describe in detail (on the back of the blank) any marked peculiarity of the child; any unusual ability or disability, mental or physical. Specify any bad habit. Remark upon anything else of interest in regard to the child.

.....Teacher.

Date.....

This method has the advantage that the judgments that it calls for are not analytic, but are such as have grown up in the practical life.

With this blank we have collected character sketches of eleven hundred children.

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## OBSERVATIONS ON THE MOUTH TEMPERATURE OF SCHOOL CHILDREN.

IONE M. PRESCOTT.

These observations were made upon 71 children, ranging in age from 9 to 16 years, and in the fourth, fifth and sixth grades.

Observations were always made at the same hour 1.30 to 2.15 P. M. Nearly all the children were well accustomed to similar experiments.

Two series of observations were made and the mean temperature for all (144) observations was 99.2°. These are distributed as follows:—98.6° eleven; 98.7° twelve; 98.8° three; 98.9° seven; 99.0° five; 99.1° thirteen; 99.2° twenty-two; 99.3° seven; 99.4° fifteen; 99.5 five; 99.6° five; 99.7° seven; 99.8° five; 100.0° six; 100.2° one; 100.4° one; 100.5° one.

Comparison of the boys and the girls shows a clear difference. The mean temperature of the boys is 99.2°, and of the girls 99.1°, a difference that appears for all ages, with the exception of two.

By separate years the figures are: nine and ten years, 17 cases, mean 99.1°; boys 12 cases, mean 99.2°-99.3°; girls five cases, mean 99.1°.

Eleven years 24 cases, mean 99.2°; boys 11 cases, mean 99.4°; girls 13 cases, mean 99.1°.

Twelve years 23 cases, mean 99.2°; boys 14 cases, mean 99.3°-99.4°; girls 9 cases, mean 99.0°.

Thirteen years 28 cases, mean 99.1°; boys 16 cases, mean 99.0°; girls 12 cases, mean 99.1°.

Fourteen years 24 cases, mean 99.0°; boys 12 cases, mean 99.0°-99.1°; girls 12 cases, mean 98.9°-99.0°.

Fifteen, sixteen, seventeen years 28 cases, mean 99.2°; boys 21 cases, mean 99.2°; girls 7 cases, mean 99.2°-99.3°.

The evidence of these cases is to show that on the whole the temperature of the girls is lower than that of the boys, that there is a period of lower temperature extending from 12 to 14 in the girls, and from 13 to 15 in the boys. At thirteen the temperature of the boys is lower than that of the girls.

The 144 cases 90 boys, 54 girls fall into groups as follows: 98.6°-98.9° inclusive, 18 boys, 14 girls; 99.0°-99.2°; 34 boys 26 girls; 99.3°-100.5°; 38 boys, 4 girls. A much larger proportion of boys appear among the high temperatures, and the variability of the boys is decidedly greater.

In the two series there is considerable variation, comparing the records of the same individual in both; the variability amounts to .3+° and is due to various causes. In order to determine, if possible, whether any of the differences were constant, another series of observations was made upon two groups of children. The first contained ten that stood among the highest in both previous tests and the second, seven of the lowest. The mean temperature for the highest group as found by the third test was 99.6°, the mean temperature of the second group was 98.7°.

Only one individual fell into a different class on the third

trial. The evidence is strong that individual differences are constant. Some of this individual difference, but not all of it, is apparently due to age.

No child of the low temperature group was marked excellent in class standing by the teacher; three were marked good; among the high temperature group all but two were marked either excellent or good. Of course many more experiments are needed to confirm these observations, but some of the results are too clear to be entirely the result of accident.

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## A TEST OF SUGGESTIBILITY OF CHILDREN.

PETRA SUNDT.

This test was made by a modification of the method used by Binet. The apparatus consisted of 12 cards, 13 cm. by 5cm., each having longitudinally in the center a line; the lines were of the following lengths, in millimeters: 12, 24, 36, 48, 60, 60, 60, 60, 60, 60, 60, 60. The test was made with the children singly. A paper 28 by 21 cm., ruled lengthwise with faint lines, was placed before the child and he was directed to trace on these lines one under the other, the length of the lines on the cards as they were shown to him one by one in the order given above. The model line was held before the child until his copy was completed, and he was allowed to change his line if at the first attempt he was not satisfied with it. Seventy-seven children ranging in age from 9 to 16 years were tested; suggestibility was shown in all cases, but varying in degree, and in type. Some, accepting the suggestion completely, made each line a little longer than the last; in one case the last line extended the entire length of the paper, 28 cm. Others increased the lines by long steps, then began again with a shorter line when the copy obviously exceeded the model line, then continued to increase the lines as before. A few followed out the suggestion that was offered by the first correction, and continued to decrease the lines, one after another to the end.

The average effect of the suggestion can be stated by throwing all the lines into a composite curve.

This gives lines of the following lengths 13.0, 25.4, 37.7, 51.7, 66.5, 70.3, 68.1, 68.6, 69.1, 71.0, 69.5, 69.6.

As shown by this average curve, the child makes two corrections by observing the model lines, but after each again takes up the suggestion.

The amount of suggestion was found by taking the error in the lines from the sixth to the twelfth, and dividing these results into seven classes numbered I-VII. The number of lines

in the child's paper that exceeded the line above it, beginning with the sixth, was also recorded and the sum of these two numbers was taken arbitrarily as the index of suggestibility. These results correspond very closely with judgments made by simple inspection of the curves.

No difference was found between boys and girls; the average index was 7.7+ for each.

Age is evidently a factor in the suggestibility. The averages were: nine years, 7.2; ten, 7.8; eleven, 8.6; twelve, 7.7; thirteen, 7.3; fourteen, 7.5; fifteen and sixteen, 8.2. The averages by grades, are: fourth, 8.7; fifth, 8.8; sixth, 6.5.

Though the numbers are few, the noticeable increase in suggestibility up to the age of eleven and then the decrease to fourteen, is probably too regular to be without meaning. A study of the eight most suggestible children, as compared with the eight least suggestible, shows no marked correlations of any kind either as to age or classroom ability. None of the most highly suggestible children are in the lowest grade and the highest grade furnished but one case of a child with a very low index of suggestibility.

The assumption is that there are at least two factors at work in the judgments required by this test, that a certain kind and amount of intelligence is required to appreciate and act upon the suggestion; that another quality of mental action prevents the suggestion from entirely overruling the sense impressions; that these two qualities exist in all kinds of combinations making correlations impossible in a small number of cases.

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These tests and others of the series demonstrate to the minds of the workers the value of tests, carefully made, upon small numbers of children, in giving clues to tendencies, that can be confirmed by larger studies or by repetition upon other small groups. Much of the labor that has been expended upon mass studies, in which the test failed to work because of some unforeseen misconception on the part of the children, or some flaw of method, might have been avoided by preliminary study of small groups of children, a method by which much of the pathfinding work in individual child study must be done.

# THE PEDAGOGY OF JESUS.

By G. Harold Ellis, Fellow in Clark University.

## Introduction.

The influence of Jesus upon the lives of men is one of the wonders of history. What gave this humble Galilean peasant this power has been the theme of discussion ever since his day.

An easy answer is found in theology in that "he who spake as never man spake," whose words came "with authority and not as the Scribes," and whose healing words reached to the depths of man's life and penetrated the tomb, could be no less than God incarnate; and hence it is presumption to penetrate the veil of mystery cast over his life.

The skeptic answers the question by telling us that great men have always been deified by their devotees, and we are staggered by the array of proof he brings before us.

Both of these answers are unsatisfactory. Grant that Jesus were God himself, he must conduct himself so as to be understood by common mortals, and thus the manner of approach to men is still a legitimate problem for study.

The mythical theory may be true but that does not tell us how Jesus got the influence over men such as to cause them to deify him. The success of Christianity depended upon something more than the preaching of a miracle-working God-man, and that *something* must be sought for in the method and teaching of Jesus. The solution of the problem must then be in Jesus as a *teacher*. All the theological speculations are but the evidence of the profound impression Jesus made on his hearers. The psychological fact remains, whatever interpretation is given to the theology or mythology—as one chooses to call it. It is not the multitude of words but the *fact* behind them.

That Jesus was a teacher has never been recognized as it ought in educational literature, lives of Christ and theology. Educational works have ignored him, lives of Christ have degraded him, art has made him a pathological specimen, and theology has made him a metaphysical abstraction. Thus he has been removed from the real life among men and well may another Mary lament, "They have taken away my Lord and I know not where they have laid him."

A healthy sign of a change is in the much abused "Back to Christ." Interest is centering not so much on what the New

Testament writers have to say about him as in what Jesus has to say about life and its problems. Recent writers on social problems have generally made an appeal to the teaching of Jesus.[1]

Jesus was a great personality. Great movements have always been led by great men. Men live in the memory of posterity because there was something in their life that commands its interest. That Jesus as a man was supremely great has not been recognized in the church so much as among "outsiders" —perhaps because the divine had so overshadowed the human that it was not seen.

## I. The Method of Jesus.

### 1. *The Calling and Training of his Disciples.*

Shortly after the beginning of his ministry, Jesus collected a little band of disciples. Of their call there are two versions:—

(1) Mt. 4:18–22 and Mk. 1:16–20 give the call of Peter, Andrew, James and John just after the beginning of the Galilean ministry.

(2) Lk. 4:1–11 puts the call at a later date and gives an altogether different account of the event.

Instead of helping matters John (1:35–41) complicates matters with a third account in which Andrew, Peter, Philip and Nathaniel are called while Jesus is at the baptism of John. Mark and Matthew as representing the older tradition are to be followed. They know nothing of John's account and Luke's is irreconcilable.

That Jesus made a careful study of his man before he called him, we have every reason to believe. He felt he had a great work to perform and that much depended upon the character of the men he chose to assist him.

Nothing is more remarkable than the way in which Jesus almost impressed desirable men into his service, and turned away those he saw to be undesirable, however anxious they were to follow him (Mt. 8:18–22).

This ability to read men at a glance, while exaggerated in John, is the key to his wonderful success, and shows that the years spent as a Nazareth carpenter were improved by the study of men. But with all his insight Jesus made one mistake—in Judas.

We are not to take Lk. 6:12–16 as evidence that Jesus chose his disciples all at one time. The same call that was given to the Galilean fishermen was given to others throughout the course of his ministry whenever he saw a young man of promising usefulness (Mt. 8:19; 9:9; 19:21 and Lk. 9:57).

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[1] Peabody: Jesus Christ and the Social Question.

Even if there were but twelve disciples there is no good reason for supposing that the number was complete before the close of his ministry, and it seems more likely that all who were called were taken into the number of the disciples and those whose names are mentioned are the more prominent ones, while the number twelve is due to the artificiality of the Apostolic church which took special delight in making all of Jesus' acts symbolical. The lists of the Twelve differ widely showing that there was some difference of opinion as to whom the list should include.

Keim has made the suggestion that Jesus chose young men in their later teens, and though unsupported by most writers on the subject, there are several reasons for supposing this to be the case:—

(1) The man called in Lk. 9:61 certainly was a young man that had not left his childhood home, for he betrays his youth in his desire to bid his parents farewell. An incident that shows the impulsiveness of youth is that of the rich young ruler (Lk. 18:18–30, Mk. 10:17–31, Mt. 19:16–30).

(2) The first four disciples had not left their childhood home. They seem not to have owned the fishing outfit but worked under the supervision of their father, who was not too aged to engage in this laborious work, for when called by Jesus they left all and followed him.

(3) The duty of marriage and raising a family gives added weight to this view. The Jews regarded children as God's richest blessing, and to be without a son was to be branded as accursed of God. The shrinking from parenthood so common to-day was totally unknown among them. Consequently, we must expect that the disciples would have been married had they been old enough or had they been long at the marriageable age.

Peter who appears as a married man, seems to have but recently become so, as he had no property to look after before he followed Jesus. He must have been the oldest of his disciples as he always appears as their spokesman.

(4) The universal tradition holds John to have been much younger than the rest of the disciples. This tradition would be worthless but for the fact that we have historical evidence that John lived till about the year 100. Tradition in regard to the other disciples' ages is less satisfactory, so whatever data the New Testament gives us or that can be derived from probabilities, must guide us here.

(5) Jesus had before him the example of the great Doctors of the Law who were ever on the alert for promising young men. The great Hillel considered it a sin to be unaccompanied by youths with whom to talk on the Law. The Pirqe Aboth, representing the thought of the great teachers of Jesus' time,

opens with the command to "raise up many disciples and make a fence to the Torah." Thus the budding youth of Judea, who were considered the guardians of the Law, were chosen by Jesus to do away with it.

The Book of Proverbs, representing the wisdom of some two or three centuries before, was the standard of training in the days of Jesus. The hoary head is praised (ch. 16:31), to learn "wisdom," the child must go to the "wise" (ch. 5:13), the progress of the pupil is the teacher's delight (ch. 12:15, 16). In such an atmosphere the course of Jesus in calling young men would be the the most natural thing in the world.

(6) By far the most suggestive thought is found in the example of Socrates's love for the youth of Athens. Nothing gave him keener joy than to be with these youth who were the glory of Athens, and to talk with them on the great themes that were of interest to their budding manhood. This most interesting lesson of history has become even more interesting under the light of recent studies in adolescence, and shows the possibilities that are contained in this critical period of life that before had been undreamed.

(7) These young men were free from bias that older men would have had, and were unspoiled by the unproductive education of the times.

(8) Adolescence is the age of ideals, when the best motives of life are at the flood tide. In his lectures on adolescence, Dr. Hall has commented on the high ethical character of college graduation essays. This period of adolescence is the age of religious feeling as all reports show. Again it is the age of hero-worship.

The heroes of the world have been made and preserved in the nursery tales of a nation. Dr. Dawson's study of "Children's Interest in the Bible,"[1] and Mr. Bell's article on "The Teacher's Influence"[2] are extremely suggestive of the ideals of childhood and the influence of adults upon the child's ideals.

Mr. Bell's report shows the greatest influence came, for boys, from 16–18; for girls, 14–16. The moral influence predominates. There is evidence of an intense longing in the pupil to be loved and the ready response of the pupil to the teacher interested in her pupils is shown by the fact that 68% of the men and 61% of the women reported the most good gained from teachers they loved.

This is very suggestive of the influence of Jesus upon his disciples. He called these young men from all home ties (with few exceptions) and fastened their love upon himself,

[1] *Ped Sem.*, VII, pp. 157-178.
[2] *Ped Sem.*, VII, pp. 492-525.

and became to them a spiritual father and mother. How well he succeeded in binding them to him by their altruism, religious impulses, idealism and love, history speaks in unmistakable terms.

The possible method by which Jesus sowed the seed of his doctrine upon the virgin soil of their loving, plastic minds, is full of suggestions as to our present methods of education. These young men accompanied Jesus in his ministry and were taught by the object lesson of his life and work. Probably they were left very much to their own thought, Jesus adding a word now and then as the occasion demanded. He lived his own life and did his own work, leaving his disciples to interpret him. We can imagine Jesus going his way, deep in thought, and followed by his disciples who talked about the experiences recently passed through, of the reception they were likely to receive in the next town, or of the things they saw by the way. All this must have been carefully followed by Jesus who frequently asked what they were discussing, and by a pregnant saying or parable suggested by the trend of thought, he drove home the truth he wished them to receive.[1] Often he rebuked them for their lack of insight and enthusiasm. The confession of Peter at Cæsarea Philippi was the "final examination" before the Jerusalem trip that Jesus saw would mean so much to him and his cause, and we can well imagine the satisfaction this confession gave to Jesus concerning the success of his training.

The parables of the Growth of Grain, the Mustard Seed and the Leaven may all be taken as the expression of the method of Jesus with his disciples. To-day the hot-house, forcing methods are all-important in education. One of the present day fallacies of the Anglo-Saxon race is that all is a failure that does not yield immediate results. If Evolution has emphasized anything by its almost infinitely slow methods, it is this. But Jesus had absolute faith in human nature, despite later dogmas on total depravity. Given good seed and proper soil, results were as sure in the spiritual world as it is in the natural world.

### 2. *The Form of the Teaching of Jesus.*

From the Synoptic Gospels we learn that Jesus gave not long discourses, but short pregnant sayings and parables. Matthew has given us the long sermon on the mount but from a comparison with Mark and Luke we see that all the sermons of Jesus are united as one by the first gospel.

*The Sayings of Jesus* have a peculiar style that differentiates

[1] See the illustration of Jesus going up to Jerusalem, in Tissot's Life of Christ.

them from the Proverbs or any other Biblical literature. The Proverbs generally compare the way of the good man with that of the bad man ; they are antithetical and both bad pedagogy and low ethics. They represent not the healthy aspirations of youth, but the gouty pessimism of old age looking back at youthful indiscretions. The description of the "street walker" in Prov. 7 shows that the author was by no means a stranger to her.

The Sayings of Jesus, on the other hand, are the instinctive expression of a normal healthy mind. He never argued with a man but appealed to those things that all would recognize as true and right. As compared with the Decalogue, Jesus' Sayings are immeasurably superior. The Commandments hold up an evil before the mind and says "Thou shalt not," and straightway the desire to possess that evil is aroused if it was not there before, and strengthened, if already there. Jesus' sayings are all positive, with few exceptions in which he answered questions asked him. Thus Jesus consciously or unconsciously found the pedagogical principle that to be good or do good, one must think of the good rather than of exclusion of evil. Whatever the mind continually dwells upon will unfailingly exclude all else. It is not unlearning bad habits that is to be emphasized, but learning new and better ones.

The paradoxes of Jesus have given many good people much distress of soul to make him consistent, never dreaming that only small souls are anxious about consistency. An example of paradoxical language is seen in a comparison of Mt. 12:30, "He who is not for me is against me," and Lk. 9:50, "He who is not against us is for us." These and other utterances were made as occasion demanded ; he never stopped to see if he was consistent with what he had said before. To make an exegesis of the words of Jesus (or any portion of the Bible, for that matter) without considering the occasion under which they were spoken, is a most serious blunder. The "case system" in Legal interpetation is equally applicable in Biblical interpretation.

*The Parables* of Jesus have been universally admired. Though commonly in use no one had used them so extensively or so well as Jesus. He never tried to draw a crowd but rather avoided it. His method was *quality* not *quantity*. He was in no haste to stretch out for the world. The teacher can do most who concentrates his efforts upon a few chosen pupils. In glaring contrast with this is the spectacular methods, now so common among the clergy, to draw a crowd. The parabolic teaching of Jesus was given to sift the crowd and compel them to think if they would find his meaning. Strauss well says : "A Parable attracted by its imagery and gave the more thought-

ful opportunity for increasing their power of understanding and reflection."[1]

Matt. 13:10–15 as the fulfillment of Isa. 6:9 is the morbid fancy of the Evangelist who had learned that the great mass of the Jews were incapable of appreciating the teaching of Jesus.[2] The great value of the parable is its teaching by concrete example. The 35 Parables recognized by Plummer[3] may be catalogued according to the following sources:

1. Flocks and Field, 10.
2. The Sea, 1.
3. Home relations, 10.
4. Business, 5.
5. The state, 3.
6. Society, 4.
7. Religion, 2.

It will be noticed that the Parables were taken from the every-day life of the people, especially the home and field which fills the life of a simple agricultural people.

The interpretation of the Parables has caused much difference of opinion, and that of itself is of great pedagogical value. The possibility of more than one interpretation has made the Parables applicable to all times and conditions.

We have seen that Jesus left his disciples to make their own interpretations, but the Gospels tell us that though Jesus did not interpret the Parables to the multitude, he did explain their import to his disciples. With no effort to fit facts to a theory, there are two reasons why the interpretations appended to the Parables could not have been given by Jesus.

(1) It is an affront to the intelligence of Jesus and his audience. Either Jesus talked over the heads of his congregation, or the audience was extremely stupid. The people *did* understand his meaning but the chains of habit and selfish interests held them. (2) The appendices do not go well with the Parables. They are forced, lifeless, and often antagonistic to the Parable. Either Jesus was a bungler or the Evangelists were. Mt. 13 has all the Parables appendixed. The Parable of the Sower, which shows the different susceptibilities of men's hearts, is allegorized. "Birds of the air" will take "seed" from one kind of ground as well as another. The whole matter is due to the fear among the early church that the orthodox interpretation would not be given them, or that the readers would be as stupid as Jesus' supposed audience. Among primitive peoples the power of abstraction is not developed; all is

[1] Strauss: New Life of Jesus, Vol. I, p. 348. London, 1865.
[2] *Ibid.*
[3] Art. "Parables" in Hastings's Dict. of the Bible.

concrete. It has taken man a long while to develop abstract thought, and as that which came the earlier is the more fundamental, concrete illustrations always appeal to that which is psychologically more fundamental than abstract thought, namely, concrete thinking.

*The Lord's Supper* is the only rite that can be traced to Jesus and there is much dispute over its meaning, but when viewed from the psychological side these difficulties pass away.

All men have a desire to live in the memory of posterity and much of the incentive to action is due to that desire. The tombstone, while originating in fetichism, has abundant evidence of the effort to make one's name remembered. This is not altogether a low, cheap instinct, for it is as deep as human nature and is found in the noblest of men. We cannot wonder that Jesus, on the eve of what he easily foresaw to be his death, should have asked his disciples to remember him as oft as they gathered to eat the fraternal meal. When Jesus was gone, this rite made his presence seem very real, and the more so as he was probably the subject of conversation.

Surrounded as they were by Mithra cults and other fraternal organizations more or less full of mystery, and at a time when ancestor worship was celebrated at every meal, we cannot wonder that early Christianity took to itself this purest and noblest thought of heathenism. To this must be added the common conception that the spirits of the departed were present at every meal.

The "eating the flesh and drinking the blood of Christ," which very early led to the charge of cannibalism, has come to have a repulsive character to many. The survival of this most repulsive conception is seen in the doctrine of the "real presence" and even in the Methodist Ritual where it has been toned down to symbolism. If Hylan's report is indicative of anything it shows that the communion service is in little favor. Of two questionnaires the first of 75 returns reported 8 as favoring the communion service as a form of worship, while the second with 203 returns had 74 references to the communion—69 favored it and 5 opposed it.[1] From being the all important service in the early church this service has, in the Protestant churches, come to be celebrated but once a month, twice in three months, or even quarterly, and then the service has frequently been considered celebrated too often. Hygienic principles and various other reasons suggest that the rite needs remodelling. The Lord's Supper has had by far the most profound influence of all Christian institutions, and has been the

[1] J. P. Hylan: Public Worship. Chicago, 1901.

means of breaking down race and cast barriers. The emperor and the beggar were on a level at the Lord's table. Most of the clatter about individual cups has come from those who recognize the brotherhood of the race but are not at all anxious to demonstrate it. While some objectionable features are found in the service, Christianity would lose the one factor that has given it its levelling power if it is given up. The beauty and vitality of Christianity is bound up in the common meal exemplifying the principles of brotherhood. Looked at from any point of view the Lord's supper is the master-stroke of genius in that it gave an ethical union with the Founder and an objective brotherhood.

*The Miracles of Jesus* were regarded by the Gospel writers, at least, as an essential part of his ministry—the work was secondary only to the word. Jesus is represented as appealing to his works as evidence that his teaching was from God (Mt. 11:2–5). Miracles were a part of the mission of the Twelve (Mt. 10; Mk. 6:7–13) and were the final gift of Jesus to the church (Mk. 16:15–20.) To eliminate the miraculous element from the narrative and take the rest as sober history is as unscientific a method with the New Testament as it is with Homer's Iliad.

To an impartial student it is evident that Jesus believed that to accept his teaching would work not only a moral change in a man's life but also a healing influence in his body—in other words, holiness of life brought wholeness of body. It is also clear that he looked forward to a time when sorrow, sickness and sin would pass away to trouble man no more.

This was the belief of the New Testament writers and of the early church, and whether true to human experience or only the creation of a transcendental idealism, is a question.

The miracles are the most unsatisfactorily treated of all Biblical questions. Strauss, Keim, Renan and a host of others advocating the mythical theory, resolve all this into unhistorical accretions to the narrative, but here we have a myth as a mystery to explain. Granting mythical elements, there must be some basis for the myths. Whether the miracles are really a part of the teaching of Jesus, textual and historical criticism must answer. The effort should be not to find what he ought to have taught but to find what he really did teach, even if one has to call him in error, and unmistakably he was in some things.

By no theory of documents can the miracles be entirely eliminated, for though they are reduced to their lowest terms, the element remains and it is no harder to believe ten miracles than one. Prof. Schmiedel,[1] who reduces the genuine sayings of

[1] Encyclop. Bib., Art. "Gospels."

Jesus to a dozen short fragments, admits Luke 7:22, "And he answered and said unto them, go your way, and tell John what things ye have seen and heard; the blind receive their sight, the lame walk, the lepers are cleansed, and the deaf hear, the dead are raised up, the poor have good tidings preached unto them." The sources of the Gospels can be traced near enough to the time of Jesus to give the facts essentially as they were. A comparison of the Gospel of John with the Synoptics shows the difference between reflection and simple facts. The question remains, then, whether the Synoptic Gospels contain conscious or unconscious coloring of the facts, and in the examination of the data, two things must be borne in mind:

(1) Mythical elements may have grown up in the minds of even those who knew Jesus well, for where deep admiration for a person is felt, there is always the tendency to exaggerate the actions of his life. This may give rise to stories bearing every mark of truth and honesty. Callisthenes's Life of Alexander the Great may be taken as an illustration. Here a companion of Alexander invented some of the most improbable of stories and there is no evidence that he intended deception, but his admiration got the better of his good sense.

(2) There is no evidence that after the beginning of the preaching of Christianity any one doubted any tale told about Jesus, provided it was of a nature to honor his name.

The Apocryphal Gospels were early extant and of unquestioned authority as to facts, though some were heretical in doctrine, till the church arbitrarily canonized the works of those who were supposed to have seen the Lord, to the exclusion of all the rest, and even then the Apocryphal Gospels remained in the church for edification if not for doctrine. We are not to expect that every incident in the Gospels is verified history.

The account of the Virgin Birth is exactly paralleled by the Old Testament Patriarchs' wives and no one would dream that the children of Eve, Sarah or Rachel were *theogenetoi*. Nor is the birth of Gautama Buddha unlike that of Jesus—one is as likely as the other. These myths represent the psychological explanation of parenthood among primitive peoples and which now survives in the Christian doctrine that children belong to God and are put in human care for training. Never was a truer doctrine ever taught than the sacredness of parenthood.

The story of the birth of Jesus and the genealogies are due to the effort to make him fulfill prophecies which he claimed to fulfill in spirit; the test of his Sonship was not a doubtful genealogy, or Bethlehem's manger, but his *works*. The Resurrection is based upon the instinct that is as valid as the intellect and gives the assurance that if a man die he shall live again.

The old idea of a miracle as a suspension of the forces of nature by Divine interposition or as the focusing of another law at a given point so as to overbalance the forces ordinarily at work there, must be laid aside as groundless. All Thirsts who hold to an Intelligence behind and supporting all nature, must admit that it is *possible* for the Divine to make the world run backwards, but there is no evidence that the uniformity of nature has ever been broken and the improbability is so great that it amounts to an impossibility. Law is supreme.

In an examination of the miracles of Jesus each must stand on its own evidence and must be due to some natural law (then unknown), or to the exaggeration of a natural cause into the supernatural. To this latter belong the Feeding of the Five Thousand, the Walking on the Water, the Calming of the Tempest, the Raising of the Dead and the Miraculous Draught of Fishes. These all had a historical basis but it has been exaggerated.

The works of healing must be interpreted psychologically, as have all the other miracles, and shall we call them delusions or the religious interpretation of psychological phenomena? The latter view is favored by insanity and epilepsy being explained as demoniacal possession, but psychology and medicine must answer the question. This brings us to the most hotly debated ground of medicine—the fact or delusion of mental cures. Because extremists have carried this to unwarranted conclusions, that is no reason why the matter should not be calmly discussed and it would be strange indeed if where there is so much smoke there should be no fire.

It is well known that idle, nervous women imagine they have all the diseases advertised in the papers. Morbid thought is the only trouble and the disease has no objective reality. When mental cures are related they are generally turned away as merely the removal of the delusion of sickness.

That the imagination has a profound influence upon the body is not recognized as fully as it ought. The body and mind are most intimately associated and one is not affected without a corresponding change in the other. Every thought tends to express itself in motor phenomena.[1] This is well shown by the popular planchette and "mind-reading." Attention fixed on any part of the body will give a sensation in that part.[2]

Fear may cause death. Mosso relates cases of death from ydrophobia from fear of it and cures wrought by simply re-

[1] Lindley, E. H.: A Preliminary Study of Some of the Phenomena of Mental Effort, *Am. J., of Psy.*, VII, pp. 491-517.

[2] Hunter: quoted by Tuke. Influence of the Mind upon the Body, Vol. I, p. 5.

moving the fear. In times of pestilence fear has caused many deaths or so deranged the condition of the body as to lay it open to disease.[1] The phenomena of stigmata, notably in the case of Louise Lateau, shows that the mind can objectify its concepts. Disappointed love may lead to mal-nutrition and death by consumption. Tuke says "The emotions powerfully excite, modify, or suspend the Organic Functions, causing changes in nutrition, and excretion and thereby affecting the development and maintenance of the body."[2] The pleasurable emotions tend to act only in increasing the activity of secretions while painful emotions tend to lessen secretion.[3] There is no organ or function that cannot be affected by the mind for both good and evil. The condition of the patient's mind is a most important factor in recovery from disease. A wise physician knows that all that induces cheerfulness is to be desired, while despondency will be likely to end in the death of the patient. Rush says "I have frequently prescribed remedies of doubtful efficacy in the critical stage of acute diseases *but never till I had worked up my patients into a confidence bordering upon certainty of their probably good effects.*"[4] Dr. Wilks says "The doctor soon finds that in treating his patient, the practice of medicine is not only one of physic, but of psychology, and that the effect of his drugs *depends as much upon the constitution of the patient's mind as his body.*"[5] Marshall says "as is well known the majority of sick people recover without, or in spite of, treatment. This is a well recognized fact."[6] The percentage of sure cures are given as high as 80 per cent. Mental treatment has been tried by doctors, when medicine has failed, and with success. DeFleury[7] mentions cases of cancer and broken bones cured at Loudres. Tuke mentioned cases where bread pills made as wonderful cures as medicine.

Marshall and most writers discount the mental curists in their claim that *their method* wrought the cure, and say the result was brought about through suggestion. Granted, but the question arises as to how many of the doctors' cures are by *their* method and how much is due to the suggestion of good to be obtained by the use of some particular drug?

Not all mind cure cases recover nor do those of the doctors, and considering results and such remarks as have above been quoted from Tuke and others, the case seems to be the better

[1] Mosso: Fear, p. 252 ff.
[2] Tuke: Vol. II, p. 64.
[3] *Ibid.*
[4] *Ibid*, p. 232.
[5] *Ibid*, p. 233.
[6] Medicine and the Mind. London, 1900.
[7] A Study of Christian Science, Johns Hopkins Hosp. Bulletin, June, 1900.

for the mind curists. Nor is the doctor's case helped by an appeal to the history of medicine.

Among primitive peoples death is never considered as a natural thing; death comes from violence or sorcery, without which a man would live forever.

As disease and death are thus reduced to sorcery, principally, amulets were worn for protection and incantations were said to drive away the disease. Magical power was supposed to reside in stones and other objects, and were bound to the afflicted parts, not from a medical but shamanistic point of view. What at first was merely fetichism came in time to develop into the idea that the god was pleased to manifest himself through some particular object or shrub. That the shrub was not considered to have any medical power is shown by the incantations that were said over the remedies to induce the spirit to enter them, while it had developed a scientific diagnosis. Egyptian *medicine* was nothing more than magic. Ancient Babylon was worse in this respect than Egypt. Medicine has come from the humblest origin and until comparatively recent years was bound by superstitions of the past, and as "revealed religion" has had to give an account of itself, it may be in order to question how much of medicine is science and how much is superstition clothed with respectability.

The term "suggestion" is often used with reference to mental cures and with evident reference to hypnosis, but suggestion really covers a wider field than that and it may be doubted whether the term, stretched as it is, to cover all the phases of the equally indefinite term, hypnotism, means anything.

"Suggestion" meets us at a thousand turns of every-day life. Whenever one person influences another it is by "suggestion;"[1] prayer is nothing but "auto-suggestion" for to think that God holds the fate of the Universe in his hands whenever a Christian prays, is pious nonsense.

The use of hypnotism has been condemned as a violation of the rights of personality, and rightly too. Moll says, "Hypnotic suggestion and suggestion out of hypnosis have the same aim: to determine the subject's will in a certain direction. He is to do right, not unconsciously and mechanically, but with conscious will, which has got its direction either from hypnotic suggestion or ordinary education.

Suggestion sets the conscious will in the right direction as education does. Education is only good when what is taught grows into an auto-suggestion; *i. e.*, when in particular cases the well-taught person must consciously do the right he has

[1] Moll, A.: Hypnotism, pp. 219 ff.; Goddard: Effects of Mind on Body as Evidenced by Faith Cures, *Am. Jour. of Psy.*, X, p. 481.

been taught to will."[1] But, nevertheless, the right of another to come in and force the will to a course of action, however moral, is seriously to be questioned. Hypnotism is the abuse of the natural law of suggestion which works through faith in another, and even through fear.

"Religion has in it all there is in mental therapeutics, and has it in its best form. It teaches temperance in the broadest sense, high ideals and dependence upon the Highest alone. This preserves those who know it, by practice as well as by precept, from most of the ills that make up the list of those curable by mental methods. . . . Whatever the fundamental relation of mind and body may be, the aim of all conscious effort relative to physical well-being, should be to become unconscious of the organic life and its functions."

If Evolution has taught any lesson it is that life must be in accord with Law. Disease is abnormal and morality and health go hand in hand.

The place of religion has been to banish the fears that so long oppressed the souls of men and make them realize that they are not the victims of a cruel fate, but the creatures of an all-wise and loving Father. The author of the First Epistle of John spoke well when he wrote "perfect love casteth out fear." Dr. Hall has expressed the same thought, "Many real cures ascribed to the mind, faith, etc., I think we must really ascribe to the natural physical regeneration that comes from breaking the insidious paresis of fear."[3] This was the purpose of Jesus.

My position is admitted by Prof. Schmiedel, who says, "According to Mk. 6:5 f. we are to understand that Jesus healed where he found faith. This power is so strongly attested throughout the first and second centuries that, in view of the spiritual greatness of Jesus and the imposing character of his personality it would be indeed difficult to deny it to him."[4] Prof. Schmiedel further thinks the cures of Jesus were by psychic means, as according to Mk. 5:7–10 "Jesus, like a modern alienist, enters with the man into a conversation to find what the hallucination really is."[5]

Miracles were common before Jesus' time but they had not been on an ethical basis, nor had men dreamed that practical ethics existed except in a rudimentary way. The great work of Jesus was his uniting philosophy and life. Even though we call him deluded we must admit that he lifted up the medical science of his times to the field of practical ethics. The

[1] Moll: *op. cit.*, p. 332.
[2] Goddard: *op. cit.*, p. 501.
[3] A Study of Fears, *Am. Jour. of Psy.*, Vol. VIII, p. 227.
[4] Article *Gospels*, Encylopædia Biblica, Vol. II, coll., 1884–1885.
[5] *Ibid.*

writer of Proverbs emphasizes a principle that modern psychology has made a scientific fact—as a man "thinketh in his heart so is he." This principle underlies all Jesus has to say on mental hygiene. Our papers are full of crime and patent medicine advertisements which, by the law of suggestion, are creating abnormal thoughts in their readers. The law should forbid the printing of blood curdling details of crime and also the promiscuous advertising of patent medicines, except among doctors. We should regard the medical advertisement and the courtesan as on the same plane. Pure wholesome thought is as necessary as pure air.

## II. The Contribution of Jesus to Education.

We are not to expect that Jesus originated all the principles he enunciated. Every man is the product of his environment, and whatever may be his teaching, its germs will be found in the past. His originality is seen in taking old ideas and giving them a new life. There are a number of well defined principles underlying the teaching of Jesus.

1. *Life has a purpose.* The seeming egotism of Jesus was due to this conviction, and his power of inspiration was directly due to this. One's work can be done by himself and not by another.

2. Things in the world of intellect move according to the laws of evolution. The Law and the Prophets led up to Jesus, and though his teaching was for the present, it equally considered the future. Things must be regarded in their organic connections. Changes come by evolution, not revolution. Though the teaching of Jesus was in direct opposition to the Law, he saw much in it that was worthy of mention and said nothing about the rest, but when pressed by others, said it belonged to a lower dispensation. Nothing illustrates this principle of evolution better than the development of Jesus' teaching.

3. The world must be regarded from a catholic point of view and not from a narrow sectionalism. The Law only considered the Jews and at best the later prophets regarded the triumph of Jahveh as a physical, not a moral one. The ministry of Jesus led him to take a view as broad as the world, even though he never suspected how large that world was.

4. He emphasized principles not laws. Principles are for all time; laws are but the embodiment of those principles at a certain stage of development. The principle of love to God and man was carried out even to love an enemy.

5. Emphasis was laid on life as an attitude, as an ideal to be striven for, rather than as a philosophy. He approved not the

man who said yea, yea, but the one who did the will of God.[1] The miracles reflect the thought that religion was a life and not a creed.

6. Jesus taught by positive precepts, thus creating ideals of right living and habits of right thinking.

7. Teaching was by concrete lessons from such things as interested his listeners, and most probably Jesus' teaching was by object lessons.

8. The parables stimulated self activity and prevented mental stagnation. No principle of pedagogy is more fundamental than this.

9. Jesus gave no rules for church organization nor for the conduct of the work, thus leaving the church elastic and in a condition to adapt itself to its environment.

## III. Jesus as an Ideal Character.

There is in the heart of every one a desire to rest upon something as final and authoritative. It may be the church, the Bible or a person. On the other hand the surest way to undermine a person's faith is to question the authority of that upon which it rests.

Dawson says, "At all ages, children feel more interest in persons than in any other elements of the Bible. Even Bible scenes and stories appeal to them mainly through the man, woman or child that is the center of the scene or the principal actor in the story. This suggests that the Bible should be given to children of all ages, through its personal element. Thus the Bible should be given to young children through the child Jesus. Everything in either the Old or New Testament that could be properly used to make this human child Jesus intelligible and lovable should be employed. "No theological explanation of his birth, nature, or mission need be attempted. The spontaneous love of one child for another may be trusted to give Jesus a secure place in the affections of children, if he is presented simply and attractively."[2] In other words, to make Jesus or any other character appeal to children or adults, those traits must be emphasized which make contact with the interests of those children or adults. But something more than this is necessary. There must be a type of character that transcends the present experience, and lies along the line of thought of the person interested.

Moses with all his strength is a faulty character, and David would speedily be sent to prison were he to do to-day as he did in his times. It is a most difficult matter for an adult, much

[1] Pfleiderer, O.: Philosophy of Religion, IV, p. 251.
[2] Children's Interest in the Bible, *Ped Sem.*, VII, pp. 177-178.

less a child, to make allowances for changed circumstances. To my knowledge a class of boys unanimously condemned a character in last year's Sunday school lesson, even when the teacher and lesson notes attempted to show how a thing could be right then but wrong now.

Mention has already been made of the treatment Jesus has received from theologians and artists. This shows what strange ideals neurotic people will have. But looking at Jesus as portrayed in the Gospels, we find a person normal, yet strong, in every phase of his mental life. The emotional, active and reflective sides of his mental life were highly developed and well balanced. So far as I have been able to find out, no one has found anything in the life of Jesus to criticise. Removing him from his historical setting, so far as we have anything to judge him by, there would be nothing objectionable in his life and teaching as to-day viewed from the standpoint of the better classes. Jesus has been removed from the divine, but only to be inshrined as never before in the hearts of the people, because that love is an intelligent one.

## IV. Jesus and Other Great Teachers.

No three characters in history present more similarities than Buddha, Socrates and Jesus. This is not remarkable for within certain limits all grand, ethical, and religious reformers of history have much the same characteristics.[1] Religion was, probably, more present to Christ and Buddha than to Socrates, who had to meet sophistry, scepticism and dogmatic materialism as well as the anthropomorphic conceptions of Hellenic religion. Buddha had a purely ethical mission besides his antagonism to Brahmanical theology; and Christ combined with his attack on Pharisaism and Hebraic ritual the advocacy of socialistic ideas and democratic championship. Xenophon and Plato are to Socrates what the Synoptic and Johannine Gospels are to Jesus. Buddha is likewise pictured in this two-fold way in the wonderful *Lalita Vistâra*, the standard Sanskrit work of Northern Buddhism, and in the more humble *Pali Pitokas*.

Socrates's mission was revealed to him by an oracle, Gotama Buddha's while under the Bo-tree, and Jesus' while in the dessert. Jesus and Buddha both had a protracted temptation; both have priestly bigotry to meet. All three met violent persecution. Each refused to incorporate any physical or metaphysical theory into his teaching; each started from topics of every-day life with parables, etc. Jesus has his Judas and Buddha his Devadatta. Jesus had his John, Socrates his Phædo, and

[1] This and much of the matter following is taken from Courtney's chapter on "Socrates, Buddha and Christ," in his *Studies at Leisure*, pp. 181-202.

Buddha his Ananda. The account of Buddha's death resembles both that of Socrates and Jesus. Buddha dismissed his disciples at Vesâli much as Jesus did his before the Agony of Gethsemane. Each comfort his disciples with a farewell discourse. Buddha and Jesus are later thought to have been born of a Virgin. Buddhism and Christianity started as a purification of an old religion; both were universal religions of salvation; and both developed into monasticism and sacerdotalism.

Buddha's sermon at Benares suggests the sermon on the mount and was given under the same circumstances. All were "other-worldly," except, perhaps, Socrates, and he showed that trait in his farewell speech. Jesus and Buddha looked at their teaching as a purification of the old religion, but both taught, in reality, doctrines that could not be reconciled with the old. Neither Buddha nor Jesus gave any directions concerning the conduct of the work after their death. Both Buddha and Jesus demanded self-renunciation.

A quotation from one of the scores of parallels with the New Testament sounds familiar, "What men call treasure when laid up in a deep pit, profits nothing, and may easily be lost; but the real treasure is that laid up by man or woman through charity, piety, temperance and control."

T. S. Berry gives nine points of contact between Buddhism and Christianity.[1]

1. Nature of Righteousness.
2. Importance of Righteousness.
3. Nature of Sin.
4. The World.
5. The Path of Duty.
6. A man's work begins with himself.
7. The Duties of Life.
8. The Personal Founder.
9. The Visible Society.

He also gives a large number of parallel quotations from Buddha and the Bible. His "contrasts" between Buddhism and Christianity are far fetched and apply as well to the latter as the former. A comparison of the place of woman in Buddhism and the Pauline Epistles will show that Paul might have copied his doctrines from Buddhism, so far as difference goes.

There are some contrasts between the life and teaching of Buddha and that of Jesus. Buddha was of royal blood and after enjoying the pleasures of the world to the full, turned from his old life in disgust to seek for rest of soul in something else. His teaching has the pessimistic ring of wasted passion. Jesus was of obscure birth (unless the Genealogies are taken

[1] Christianity and Buddhism. Loudon, n. d.

as sober history) and so far as any evidence, historical or psychological, is concerned, developed naturally.

The question of the influence of Buddhism upon Christianity is an interesting one, and though it is likely and in some matters, certain, the coincidences have been carried too far, we must remember that history does repeat itself and that the conditions that once gave rise to a certain type of man may again bring out another of like character. As has been noted above, Buddhistic influences are traceable in monasticism, rosaries, and possibly in image worship, Madonna worship, and the doctrine of the Virgin Birth.

The genuineness of both the Gospel narratives and the Speeches of Buddha are called in question and if we are sometimes compelled to accept Prof. Schmiedel's sweeping conclusion with regard to our Gospels, we may solace ourselves with Prof. Garbe's conclusion with regard to Buddha (which would then equally apply to Jesus), "For since the doctrine, of all these [old Hindu monastic] orders, or of their founderss were essentially alike, and since it will scarcely be attributed to accident that the teaching of Buddha alone developed into a world religion that even to-day is the most widespread of all religions on earth, the only explanation of this is found in the assumption that Buddha's manner of teaching is responsible for the result, and that we have to seek in it the germ of the latter expansion of Buddhism."[1] Thus Christianity and Buddhism stand as the irrefutable proof of the personality of the men who founded them.

[1] Garbe, R.: Philosophy of Ancient India, pp. 81, 82.

# HOW CHILDREN AND YOUTH THINK AND FEEL ABOUT CLOUDS.[1]

By G. Stanley Hall, and J. E. W. Wallin.

## Sec. I. Contemporary Childhood.

Of the 461 returns on which this study is based, 85 were negative, 62 of these containing no allusion to the matter, and 23, the explicit statement that nothing could be recalled. That the 18% of negative cases may slightly underrate the number of subjects deficient in cloud fancies appears from the following considerations:

The number of positive answers was 327 for females, and 49 for males. The number, of especially the latter, may be too small to be regarded fairly representative.

The results were gathered under various conditions.

Two collectors gathered replies to several questions on the moon, sun, storms, wind, heat and cold, stars, frost, ice, clouds, etc.; the queries on the latter being the following:

What are the bright clouds on a sunny day made of, also the dark, heavy clouds, and what are they for?
What have you fancied you saw in the clouds?
How did the prettiest and brightest one you ever saw make you feel?
What did it suggest?

The answers to these questions were mostly reminiscent; a considerable number were replies by young children, some were observations made by the contributor while watching and discussing the clouds with a child, and some returns consisted of all three. Another collector asked his pupils to jot down recollections concerning their spontaneous feelings toward the above phenomena, without formulating definite questions, especially cautioning them against exaggeration or over completeness. These returns also contain a few reports of child-

[1] We especially acknowledge our indebtedness to Principal E. H. Russell, of Worcester, Miss Lillie A. Williams, of Trenton, N. J., Professor W. S. Monroe, of Westfield, and to the Oswego State Normal School. These four normal schools have collected the most and best of our data.

Dr. Theodate L. Smith has done work, especially upon the latter part of the article, that almost makes her a joint author.

ren's sayings. A third collector obtained returns upon "What I, as a child, saw in the clouds."

The material thus collected specially appertains to the stage of life represented by normal school girls of an average of about nineteen.

Taking the results of the second collector, where all of the given groups of 214 students gave their own recollections on, at least, six of the questions propounded, as most representative, we have 26% of negatives, 35% of which stand for positive declarations that nothing could be recalled, some of these, however, recalling that factual existence of early, but, now forgotten, recollections, and 65% for blanks, we shall, perhaps, not err greatly in accepting 25% as a mean value. If so, then one must be struck by the wide prevalence of the cloud tropism in the modern soul, a fact of no mean significance in itself for naturo-pathic psychology.

From what has been stated it may be inferred that no comparison will be attempted in the gross results between the sexes, the ontogenetic stages, nor the different varieties of fancies. This could only be done with any semblance of precision where the data represent resultants from identical or uniform methods or conditions.

In all such work as this there are peculiar temptations to theorize on insufficient data, to ignore negative cases, and to make too much of each individual that proves a theory. The material itself is heterogeneous, and from different places; gathered on different methods, from different ages. Perhaps some of the questions may have been too suggestive. There is no better ideal than that of Darwin, "I worked on true Baconian principles, and without any theory, collected facts on a wholesale scale." Let him who seeks truth resolve to state and interpret, not make, his facts; to bridle his own tongue, while the facts recite their own story; to place the gag where it belongs, over his own wobbling tongue and bow in humility to the authority of "facts collected on a wholesale scale."

It may be frankly acknowledged that, in this field, as indeed in any, where the representative function is at work, much that is of choicest value is individualistic.

Probably no one would champion the crass assertion that this is purely a chapter in individualistic psychology or æsthetics; yet were he so disposed the application would fit most smoothly in the more elaborate constructions or symbolisms. Yet even here the influence of a common environment is of undoubted potency.

To harmonize the two standpoints, or minimize the difficulty at stake, we shall quote freely from the returns, although this

must be done topically, and give replete details even of points seemingly trivial.[1]

*What Clouds are for.* Fifty children between the ages of 4 and 13, with the average above nine, were asked what the high, bright and dark, heavy clouds were for. Twenty-seven mentions were made of their connection with rain, 2 of these referring to the high, bright, 17 to the dark, heavy clouds, and 8 were generalized.

Seven thought their function was to make the sky look nice or pretty, five of these referring to the bright ones; and one each gave their functions as follows: bags to hold rain (M. 12), to hold up water (M. 10), to make the rain come down (F. 11), the black to make the wind blow, and the bright, to help the sun make heat for people and animals, and to help make light (M. 5), the bright, to form cumulus clouds, while the dark are a sign of rain (F. 9), the dark to announce rain and a coming storm (M. 9), to protect the sky. (F 13), to cover or shade the sun (F. 10, M. 9), to make shade on the earth (F. 6), to keep us from seeing the angels (F. 12), so we can't see God, the Lord and the angels (M. 4), the bright ones, to prevent the sun from shining too bright and to make it cooler on a warm day (M. 12), the black to allow the sun, moon and stars to go behind and sleep (M. 11), to give us rain and air (F. 10), to water the plants (F. 11), "to make men's wives keep from getting drunk" (M. 6), (he had played this in a game); two did n't know their purpose.

Of most obvious interest are, (1) the considerable variety of different purposes mentioned, over a score for less than twice as many children.

(2) The fewness of the staple or most prevalent purposes, such as the black clouds for rain and the bright ones for beautifying the sky; (3) the common sense of most, the fancifulness or the absurdity of some replies.

*Their distance.* According to Lang and Erk, in the *Deutsche Meteorigisches Jahrbuch* (Munich), for 1901,[2] the heights are as follows:

Stratus, under 5,000 ft; nimbus, or rain cloud, 5,000; cumulus, 5,000 to 6,500; strato-cumulus, 6,500 to 8,000; cumulo-nimbus, 4,000 to 13,000; alto-cumulus, 13,000; alto-stratus, 16,500; cirro-cumulus, or dappled sky, 20,000; cirro-stratus, mackerel sky, 27,000; cirrus, or mares tails, up to 35,000.

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[1] The figures, where not otherwise stated, refer to the number of mentions, and not to the number of persons. The two need not coincide; *e. g.*, *a* may see horses, lions, chariots and mountains, *b* regard the material as smoke, snow and water, which accredits one mention to each item.

[2] *Cf.*, Inwards: Weather Lore, frontispiece. London, 1893.

From the indications at hand, children regard them so near that, with mechanical hindrances obviated, they might be speedily reached, a feat often contemplated with intense longing.

(F. 20) thought surely they could be reached if two large houses near by could be superposed; (F. 19), if all the houses on her street and another, (F. 19) if all the houses of her playmates could be stacked thus; (F. 21), on seeing large white clouds near the horizon, thought that by jumping from roof to roof she could finally touch them with her hands; (F. 21) believed this possible with a stick if she could get on a hill high enough; she once ran a long distance toward one on which they appeared to rest, thinking she could grasp them in her arms; (F. 21), between four and five, wanted to touch them from a high point with a long stick; she firmly believed this possible, but that they withdrew on her approach, trying to draw her up, which caused constant fear, particularly with unusually dark clouds. (F. 22), until seven or eight, thought distant clouds actually touched the earth, or rested on tall trees when these were in the way. Another (M. 31), from about 3 to 6 conceived them resting upon the tree-tops. (M. 8) could n't see how M—"could get behind a cloud" so as to see it beneath her from Mt. Washington; (F. 19) believed she could get some snow of which the clouds were composed from the top of some high building.

**What are the bright high clouds on a sunny day made of, also the dark heavy clouds, and what are they for?**

### Composition of Clouds.

Seventy-two of the 122 replies bearing on this phase were from children mostly under nine years in reply to the question as formulated as above.[1]

In 58 mentions they are made of some form of moisture: vapor being mentioned 24 times, rain 20, water 7, steam 3, fog 2, and mist and dew once each; in 53, of smoke; in 24, of snow; in 11, of some form of cotton, in 8, of feathers, in 5 of dust, in 4, of wind, in 4, of mud or dirt, 3 did n't know; and in the others, of miscellaneous materials. The high white clouds were vapor in 14 mentions, and rain in only one; the dark, rain in 18 and vapor in 8; the white, snow in 21, the dark in only 1; the dark were called smoke (22) more frequently than the white (8 times). In 12 instances the smoke was said to be suggested by, be like or be the same as that from the smoke stacks of foun-

[1] In what follows, much that is included under representations is not reproduced here, although it could be considered as ideas respecting the material of clouds.

dries, steam engines, mills, factories and houses, which they saw rising and mingling with clouds. (F. 21), between seven and ten, believed that they were made after people had started their fires; (F. 20) thought they were made from the smoke of all the chimneys in the city; and that they passed to another city when it cleared. (M. 3), that they were made from the smoke of his father's "choo choo cars." (F. 19), that they were formed of hot smoke. (F. 10) regarded this as an indisputable fact for she plainly saw the smoke ascending from locomotives. One child thought that they were made of snow in summer; two, in winter, while snow was on the ground; one, from the snow of the previous winter; another, of that which had fallen from a mountain in the sky; (F. 19), of the water which God reached down and brought up from the ocean and rivers. (F. 4), of goose feathers pulled out and dropped, another of feather beds and one of feathers on white soapsuds. (M. 20) thought that he had parts of the clouds when catching feathers floating about.

The following materials were mentioned once each: Something like the world (M. 8);—fat making the hands greasy if handled (F. 19 from age of 5 to 8);—something tangible or solid; bodies capable of being grasped when sufficiently approached; (F. 22, never quite understood their texture while studying them);—a substance which could be cut (F. 20);—semi-substantial (F. 20);—white soapsuds (F. 22);—the wool of sheep (the white cumulü, though she knew they were not, F. 22);—ice cream (F. 16);—heavy sandstorms like those on the desert read about in geography (the dark clouds);—large volumes of white smoke spreading over the sky and forming a ceiling with beautiful curves;—white fleecy lambs (suggested by a story, F. 21);—masses of colored cotton (F.);—surf (the white, F. 22, at about 10);—dark and white patches, but doubting this because the wind moved them (M. 4);—sieves allowing water to come through as rain (F. 19);—sieves or sprinklers the size of whose perforations determined the size of the rain drops (rain clouds, F. 18);—lead, (the dark, F. 17); dollars floating around, (the mackerel sky, F. 22);—the light clouds, of pieces of silk, the dark, of ink and black cloth (F.7); —the light, of cotton, the dark, of gunpowder (F. 18, at about 8);—the light, of light smoke, the dark, of wind, rain and black smoke (F. 11);—(M. 6) the light, of the sky, the dark, of rain (M. 6);—(M. 8) the light, of air, the dark, of black smoke (M. 8);—the light, of smoke, breath and vapor, the dark, of smoke (F. 6);—the light, of soft feathers, the dark, of smoke, although they hold wind and rain (M. 6);—the light, of fog, though sometimes we make them, as, *e. g.*, "I did from my bonfire;"—the dark, of the heavy fog rising

in the morning (M. 9);—the light, of thick white smoke, the dark are of parts of a coming storm (F. 18, from 7–10);—the light, of cherry blossoms, the dark, of Penn. R. R. smoke (M. 6);—the light, of sunbeams, the dark, of vapor (F. 12);—the light, of sunshine, the dark, of something very dark (M. 5);—the light, of clearness, the dark, of rain and wind (F. 11);—the white, of dirt, the dark, of mud (F.);—the white of feathers, the black, of a "black waterproof drawn over," though the latter was not believed (F. 18);—the light, of some fleecy material, suggested by the remark, "what fleecy clouds!" the dark, of some black stuff;—both as angel's robes, the dark, having silvery linings (F);—the white, as silver streaks across the sky, the dark, as curtains pulled over the sky (F. 17);—the white, as water, the dark, as full of thunder (M. 11);—the white, such because high, the dark, such because low (F. 7).

Here may be noted again, (1) the considerable variety of substance mentioned, about fifty for 122 subjects; (2) the small number of staples, moisture and smoke forming the highest, snow the intermediate, and cotton and feathers the lowest group; the white clouds, especially, being snow and the dark, rain; (3) the sensuous basis or suggestiveness of most answers, and the arbitrariness of others.

### Cloud Representations.

Of the 601 separate mentions of forms, shapes, pictures, objects, and beings made out, formed, thought, suggested, imagined or seen, 375 belong to what may be roughly termed, animate nature, and 226, to inanimate nature.

Of the former 158 are quadrupeds; 131, persons; 25, angels; 20, plants; 11, winged animals; 4, aquatics, and the balance, miscellaneous.

Of the latter, more than one-half, or 142, pertain to what may be loosely designated geographical fancies, of which 121 are more purely land and 21 water phenomena. This includes only those objects inherent in, or part and parcel of, land and water, and not those incidental to them, chattels. The mountains (38) were most abundant—we include among them the hills (8) and the snow banks, drifts or heaps (19) many of which are described as huge in dimensions. Five stated that the mountains were made of snow, making 65 mentions. Next, follow in order land masses (55) viz., unspecified continents (11), North America (7), landscapes (6), South America (5), islands (5), countries (4), floating islands (2), Europe (2), and one each of Spain, Turkey, Denmark, the Scandinavian peninsular, the "boot" of Italy, Asia, Africa, Gibraltar, capes, farms, a land with—a lake, states and fairy

lands;—buildings (31) viz., houses (15), castles (12) of which one was an ancient structure with many turrets and towers, and another a vast pile with floating pennants in beautiful colors, palaces (2), the shining house of Queen Mab (1), church with spire (1), temple (1); ships or boats (28); water scenes (21), viz., rivers or running streams (4), the ocean (3), the seashore (3), the surf or waves (3), bodies of water (3), lakes (3), (one observes seeing the great lakes of North America), icebergs (2); vehicles of land travel (20), viz., chariots (14), buggies or carriages (2), wagons (2), bicycle (1), trains of cars (1);—vague references (19) such as figures (3), shapes (3), forms (3), images (2), pictures (2), objects, anything, most every form seen in nature, ragged forms, forms with golden borders;—cotton appearances (8), viz., huge piles (4), cotton-batting (2), huge bales (1) and thin rolling white flakes (1); rocks or stones (5);—cities (4);—flames, conflagrations or fire (4);—towers or steeples (4);—swords (4);—soapsuds (3);—triangles (2);—chairs (2);—crosses (2);—playthings (2). The following were mentioned but once: an erupting volcano, various kinds of food, things to eat, ice cream, all kinds of candy, hammocks, boots, shoes, windmills, a "black waterproof," chains, oblongs, circles, the pyramids, a pail, a shipwreck with all the details, barrels turned upside down, golden pictures, rubies, diamonds, sapphires, a round ball, "my dolls," furrows plowed in the ground, storms, a crook, velvet, roads, pipe.

The following, unless otherwise indicated, were mentioned once: people in ships (4), ships with white masts and sails (2), Elijah's chariot, chariots drawn by two or four horses and frequently with a driver, a chariot drawn by white horses, a chariot drawn by four horses pulling some one up a wide street, horses prancing along with a chariot and buggy, tier upon tier of snow crested mountains, roads winding in and out among mountains, church spires distinctly seen in a distant city, clouds drifting behind the steeples, a large card with different colors upon it. One observer noticed especially the coast of Europe from Denmark to Gibraltar (F. 21); two considered the clouds curtains of the sky, one imagining the rays of the sun when just visible around the edges, as the light behind them.

M., 11. Most commonly saw castles and landscapes, another child saw landscapes and shore scenes. To one chariots were the objects most often depicted, to another, mountains, to one castles were very rare to another common. One child imagined stories about the clouds rather than formed pictures.

Forty-two per cent. of the animals were not specified, but merely mentioned as many, several, various kinds, all sorts, wild, huge, familiar, moving, etc. The horse (24 mentions)

and dog (20) were most frequently seen, followed by the lamb or sheep (12), the lion (8) and bear (7). Other animals seen follow in this order; the bird (7), the cat (4), cow, fish, wolf, tiger, camel and elephant, reindeer, deer, bull, buffalo, duck, goose, frog, ram's head, alligator, butterfly, chicken. Trees were mentioned 16 times, and ferns, plants and flowers, single and in bunches, once each.

One observer usually saw the animals maimed or crippled; —one, the heads merely;—one, parts frequently;—one, (F. 21) especially wolves and bears but seldom human beings;— two, always huge monsters sailing through the clouds;—three, rarely ever anything but animals;—one, usually horses;— and two, never animal forms;—four, always familiar ones;—and six, usually wild ones;—one saw a caravan of camels;—one, a procession of animals;—one, the camel's hump;—one, a sheep with two legs;—three, a flock of sheep;—two, their fleece;— one, "a dog like Nell;"—one, a big white one;—one the elephant's trunk distinctly;—one (F. 21), wild animals seeking a desirable place to live;—one, a bird of enormous size;—one, saw birds flying around;—one, both flying and at rest;—one, on looking at the dogs a second time found them entirely different.

The men and animals are often regarded as participating in races and battles or chasing one another. Eight, saw battles between two armies;—one (F. 22), between a bear and alligator and between dragons and giant men;—one (F. 21), between lions, wolves, and especially bears; as the clouds passed by, she could determine the victor, the vanquished foe being thought to be eaten up;—one noticed the soldiers fall one by one in a fierce combat on the battlefield;—one saw naval battles;—one, the snow men knocking each other over;—one, steeds charging each other, a human figure occasionally appearing to block the way; one heard the thundering of two armies. One fancied animals were always trying to catch each other;—another, that the clouds were doing the same because moving so rapidly at times;—two, that the swiftly moving clouds were the pursuit of people;—one saw fishes chasing a frog;—one, horses engaged in a hot chase;—one, animals fleeing to escape God;—one tried to name the clouds in the cloud races. One saw the clouds playing tag;—one, children racing;—one (F. 21) regarded the movements as genuine races; —she named each cloud, and noticed which disappeared or completely changed its appearance first;—one saw large and small ships sailing over the ocean, alternately gaining and losing; she could generally picture the one finally victorious.

Of the persons mentioned 48 are referred to as men, 16 as women, 6 as children, 23 as people, 24 as human faces, and the

rest are miscellaneous. One saw soldiers;—one, sailors;—(F. 10), a milkman ascending the stairs with his pail;—(F. 22), a pale ghostly body reaching out longingly for her but slowly fading away;—one, a clown;—one, living and dead acquaintances;—one, friends;—one, noted people;—one, men on horseback;—one, the heads of old men;—one, the faces of old gray haired men like Longfellow;—two, their mother's face;—one, a child's;—one, a man's covered with a beard;—one, beautiful ladies, usually the profile;—one, men with wings;—one, a man with a sword;—one, persons dressed in peculiar styles doing various things:—one, a girl;—one, babies;—two, children playing different games;—one, the heart;—another, parts of a person;—one, persons awheel, in a chariot and a buggy;—one, old men with funny faces, whose pictures she would draw;—one, people busied with all sorts of things;—one, a rain- and thunder-man;—one, her aunt;—three, witches;—three, indians;—one, Dido with bows and arrows;—one, Laplanders or northern people covered with fur;—one, Santa Claus in his sleigh loaded with toys;—one, with his reindeer;—one, human beings in all sorts of positions;—one, "Jack the Bean Stalk;"—eight, giants, one only seeing the faces and three describing them as having huge bodies;—one, fairies and elves;—one, dragons;—two, men walking about;—one, men riding around;—three, never, and two, seldom, saw human forms or faces;—to another, angels were extremely rare;—(F. 21), remembers distinctly a hand seen once;—(F. 22), actually believed the faces seen to be those of dead friends;—another, that the dead were among the clouds.

The following features are noteworthy:

(1) the prolificness of the youthful shape-fancying impulse: over 100 different phenomena or striking variants, of which nearly 60% belong to the inanimate world, being recorded for 376 individuals; (2) the limited range of the "staple" objects; the following being the order for those numbering at least 20; quadrupeds, persons, mountains, continents and countries, buildings, ships and boats, vehicles; (3) the wide range of fine individual differentiations or variants of the "idols of the tribe."

At this stage the constructions of the supernatural may be pertinently introduced. One saw an angel with a bright robe;—one an angel's wing;—one, an angel with a sword;—one saw them formless and dim;—one (F. 19), on a certain day, a perfectly shaped woman with wings, which she believed to be an angel; by watching she would see many of them;—one (F.), at times, flying angels looking directly at her, thus preventing the commission of some intended wrong, through the fear that they would tell God who would punish her,—imagining all this from having heard of angels in the clouds;—one frequently

imagined she saw angels when she had been disobedient; and God looking down at her disapprovingly. One observer relates that one of the clearest remembered pictures was seen one evening a few minutes before sunset. The sky was beautifully lighted up and a form like an angel seemed to grow out of a small cloud, with the wings especially clear, and to hold a large sword extended.

The thin dark clouds blown quickly across the sky reminded one child of a frown on a person's face. When one frown was gone, another came, and imagining this to be God's face, she thought that he must be very cross and unpleasant. (F. 19) on one occasion, just at sunset, ran to her mother, telling her to come quickly, God was sitting in a chair, the bright clouds forming the image.

F., 18, always called bright clouds God's feathers.

M., 3, asked "Mamma has God got red whiskers?" He thought that the red clouds were God's whiskers.

F., 20, when about eight years old thought that our Lord told a boy in the sky to strike clouds against each other, producing a loud noise or thunder, whenever the doings of people displeased him.

Over a score alluded to heaven, mostly in respect to its locality. It was considered to be directly in the clouds, but usually beyond especially the red or golden ones.

(F. 19), believed, between five and eight, that heaven was above the clouds;—(F. 20), still believes this;—another (F. 20), rejects the scientific theory in lieu of this, the first believing that God lived in this Heaven;—(F. 19), until fourteen thought it was above the blue of the sky, regarding the sunset as a gate whose wealth of color suggested the gate of the heavenly city.

(F. 21), as a child, regarded these clouds as the gateway to Heaven: "I used to steal away in summer to a certain spot and study them, being sure that if I only had a balloon, flying-machine or something to bring me to them, I would soon be in Heaven, as I could then walk through them."

F., 26, thought that Heaven looked like beautiful clouds at sunset, and if she could push away the clouds and reach the blue she could step right into Heaven.

F., 27, considered the bright red and golden clouds the opening of Heaven where people could see a short way in, the golden clouds being the beginning of the golden streets and the bright clouds making the earth dark by contrast, the light of the heavenly city being neither from the sun nor the moon. Later she thought out and finally believed the story that the red was the reflection of the fires where Santa Claus baked cakes for good children. She thought that there was another world above us, with the blue for the ground, and another beneath us. She often dug deep holes in the ground to break through and see the people who lived there.

F., 19, was sure that the golden light in the clouds, when too bright to look at, as at sunset, was Heaven, that the gates were then open, and closed when the light and the glory faded.

The beautiful colors of sunrise and sunset reminded one observer of Heaven, and made another think that it must be very near.

To F., 22, as a child, great billowy white clouds were entrances to Heaven, and although not appearing as gates or doors, one could pass through them to the clear open space beyond.

To F., 18, the brightest clouds suggested the brightness of Heaven; to another, Heaven, where she thought the people of that realm rested upon the clouds. F., 17, thought that when the white clouds upon which sun shone were especially beautiful, that it was the beauty of Heaven.

When F., 7, saw a cloud roll over a home lately visited by death, she imagined it the place of the departed, though locating Heaven behind the sky, she wondered why clouds passed over the houses. F., 22, believed that Heaven was in the clouds; when they moved God walked about in Heaven until He reached the point where the earth touched the sky, when He came down upon the earth.

F., 22, was told when a child that dead people went to Heaven. She thought that they were among the clouds, and that changing their dresses caused changes in the colors of the clouds. She especially thought of this when viewing a brilliant sunset, fancying that the brightness of the sun came from the bright lights in their houses and halls.

F., 18, once saw her mother's form, with pale, clear and beautiful face, slowly borne to Heaven by an angel.

F., 16, relates that one evening last summer, while standing on a railway platform, she saw the semblance of a large river of lava, the middle being the hottest, with a volcano in the distance. This gradually changed to a large lake of ice, then to a winding silver pathway leading into Heaven. The first scene made her think of God's greatness; the last, of the seemingly bright and happy path, tempting us in so many ways and leading away from the straight and narrow path which leads to eternal life.

F., 18, professes to have seen Heaven, with the great shining Christ on a throne of gold surrounded by thousands of saints, and the sheet of gold leading to the gates of the city, which angels seemed to open to admit a wayfarer and then to close. The fertile fancy of this girl also depicted beautiful faces, ball rooms full of dancers, or anything earnestly contemplated while looking at the clouds. She longed to put something on the prettiest cloud so as to detain it forever. The brightest clouds suggested rubies, sapphires and diamonds to her. She also fancied that the clouds grew tired, dipped their fingers in the water and, often shaking off the drops as rain, felt better.

The following are some of the more striking, whimsical or elaborate constructions.

One observer imagined a cloud map, having upon it the stages of her fancied trip to Spain, Turkey and the Pyramids; another (F. 18), that an old woman picked feathers from her geese and threw them down.

F., 21, as a child, that the sky was a huge picture gallery with the clouds for curtains; (M. 11), that the clouds help to make the rainbow a half ring and the wind blew beautiful flowers to complete it. Once, he saw "an awful pretty cloud just like the striped kind of ice cream, pink, white, yellow, brown, orange and every other color. The sun was as red as anything."

F., 19, when about eight, thought that the clouds were actually lined with something bright like gold, which was always resplendent as if the sun shone on it.

One imaginative child saw witches and beautiful finely dressed women prowling about. Sometimes they were moving swiftly as if to meet an advancing chariot which would take them away; sometimes while waiting they would grow old and ugly like the witches. One distinctly saw the beach with the water extending out and the waves rolling in, forming huge breakers as they neared the shore; and sometimes islands were scattered over the wide ocean. To one (F.) a certain face, appearing on a gloomy day is very clear; viz., when the clouds were dark, the head of an old man smoking a pipe.

F., 17, saw, one evening when the whole sky was flushed with sunset tints, five tongues of flame illuminating the west. They seemed to her the hand of the sun extending a parting benediction to the earth, On the Fourth of July, two years ago, she counted forty-six layers of ribbons lying parallel and horizontal on the sky.

F., 19, was wont to fabricate stories, partly believing them, about the clouds, *e. g.*, that they would give her a ride whenever she wanted to go away.

F., 18, once saw in red clouds, an exact representation of a ferry boat, at another time, a lion's head.

F. 17, on seeing the lightning flash from several places in a very dark cloud before a thunder storm, imagined it a house at night, in which lights flashed from the windows as some one moved about.

## Emotional Reactions.

This may be used as a collective term for a number of psychic reactions, responses or impulses. The question, How did the prettiest and brightest clouds you ever saw make you feel, and what did they suggest? elicited rather trite commonplaces from the 47 children furnishing answers; twenty-two felt happy;—six, glad;—two, joyous;—one, nice;—one, cheery;—one good;—one, that he wanted to sit on them;—one, that they were bright to make God's home in the sky happy, and that she could reach them (F. 8);—one, that it was cruel for lightning to strike or cut them;—two, that they wanted to study them;—one (M. 7), "it did n't make me feel funny at all." One (F. 11) replied: "mamma says it is wicked to fancy shapes in the clouds; and two did n't know. Five said it made them think of or suggested, nothing;—two, the rainbow, the cloud in the one case being pink and blue;—one each, pretty flowers and pieces of silk, a good day and play, a bright day, that it would be warm weather, running and having a good time, summer, fire, heaven and home, God and whether I was good, mountains close together, not to be lazy, a glass window in church (the sunset), and boats sailing along.

The feelings of the older persons may be grouped mainly into agreeable and disagreeable feelings. We may suppose that any activity regularly, or frequently indulged in, or for longer periods of time, where no symptoms of morbidity exist, is a useful and pleasurable one. On this supposition, the love of or delight, pleasure or joy in watching cloud phenomena is a deep seated impulse. Fifteen reported they spent "much

time," or "many hours," or "every evening;" fifteen "used to enjoy," thirteen "often did," and over a score "used" to watch them.

The following is a tabulation of the articulate statements.

Fifteen stated that they found, and as many that they still find delight, great interest or pleasure in watching the clouds. Ten particularize the aspect of motion, moving along, floating by, passing over, changing from one to another, animals making a procession across the sky (F. 17), men and animals moving, (F. 23), (F. 21) used to watch the clouds for hours, marvelling at their motions, thinking that they had fallen near the horizon where the sky ended. They had for her the greatest charm of all the natural phenomena. (F. 21) took great delight in seeing the "lion trapped" and angels and persons (seen rarely) running across the sky in their attempt to escape God and come to the earth.

Ten express this charm in seeing, tracing and finding or comparing shapes, forms and resemblances, both those of the animate and inanimate world. One found this her favorite amusement, another made it her sunset occupation and then spent much time in describing what she saw.

Ten particularize on the sunset clouds;—five on the light, bright or fleecy, though to one the dark, were more attractive.

Four were filled with admiration by cloud beauty;—(F. 19), once was held spell-bound by the beautiful ones;—(F. 22), was very fond of the "mackerel" or "dollar" sky;—(F. 19), was made happy by the reddish-yellow suggesting fire;—(F. 21), can still recall with joy what she, at about 13, considered the most beautiful sight ever seen and how it remained with her all day, viz., the golden light and soft shadow thrown by the rising sun at dawn, once while driving to the station;—(F. 18), once beheld a cloud lady so beautiful and sweet as to nearly transport her with longings, giving her the highest ideal of loveliness in the world thus far experienced. To one, a particular cloud scene has remained; a large lake, with high mountains behind, and a large boat on the shore, in which it gave her pleasure to image what a good time she and her sister would have could they reach it;—(F. 25), sat long whiles studying the cloud "picture gallery;" the prettiest picture she ever saw filled her with awe.

*Attitude of Wonder or Surprise.* Three wondered why the clouds remained or how they were suspended in the sky;—(F. 20), being greatly perplexed over this after being told that the sky, which she regarded as their support, was miles above;—three, how they would feel;—(F. 22), if as soft as cotton;—(F. 19), still wondering about this;—two, why the snow banks did not melt on a warm day;—two, why they moved;—one

each: how the smoke could fall as rain, when told the rain came from the clouds, (F. 17), how it could get so high and so varicolored (F. 17), how clouds so beautiful could become so dark, gray and cold after the sun sank (F. 19), where they were when the sky was clear (F. 21), what the white was (F. 5), if the child seen while lying flat on her back watching them could see her, if the first clouds, sulphur-yellow, appearing at three o'clock on the morning of the Fourth were omens of some coming evil, and what would happen to the little house on the mountain side if Vesuvius should have an eruption.

*The attitude of doing, wishing or yearning for.* These longings were mentioned once each: to feel and sit on the "cotton" (F. 24);—to get up and stand on the "snow mountains" (F. 16);—to sink down and be covered over in the "featherbeds" (F. 18);—to hold some of the colored sunset clouds in her hand she admired them so immensely (F. 17);—to stretch her arms out, take a breath, and let herself go up in the air, she felt so light on seeing the beautiful ones (F. 19);—to poke the fingers in the pretty ones and go up or have them come down and play with him (M. 7);— to plunge into the "soapsuds" (F. 22);—to feel the light feathers (F. 20);—to go up to the pretty ones (F. 19);—to jump right into the middle of the cotton (F. 22);—to lie on the light fleecy ones, which we could lie watching by the half-hour, and be floated through the sky;—to follow some particular one (F. 18);—to follow Jesus, whom she saw radiant with white robes, ascending heaven (F. 19);—to get up and see the women or girls seen there (M. 5);—to have the child seen come down and play with her (F. 22);—to paint the most beautiful one ever seen (F. 17 at about five);— to have the prettiest stay always and get dresses of the colors of some;—to look at the bright pretty ones all the time;—to keep a beautiful sunset, it faded so quickly: would say, "O! mamma catch it, catch it, it's such a nice one," and, "O! I want a dress like that; pitty, pitty clouds," (F. 18, at about 5);—to get above the large, dark clouds, to see what was going on. She was positive God was fixing something he did not want seen; would look at the sky to find a chance (F. 19);—to have the favorite cloud pass the others in the race, becoming as excited as in watching a real race (F. 19);—to know how to ascend into the big piles of snow in the summer and bring down something to eat (F. 19);—to get to bed on seeing a very beautiful red and purple sunset cloud stretching wearily along the horizon;—to climb to the tree tops and slip off into the strong, fleecy substance floating upon the air as a boat upon the water, which he watched at the horizon for hours, and to float through the heavens. His parents caused him great grief by not allowing him to go to the horizon for this purpose (M. 21 Clark fellow).

*Disagreeable feelings.* Thirteen of these are of a mild character; twenty-five represent fear or terror, ten of these referring to the black clouds, and six to the possibility of the clouds falling down.

The following are the specialized individual feelings relative to different situations:

Sorry when a clear white, joined a dark cloud (F. 22);—felt very sad on being reminded of the death of a young acquaintance by a cloud, seen high in the sky just before sunset, producing a lasting impression. In color and shape it suggested an angel's wing (F., 25, at 15);—felt very badly on seeing smoke ascending in wavy, dark rolls, which made her feel sure that the sky would be all covered and that it would rain, but she often noticed that the rain did not "use up" the clouds; felt oppressed on gazing at dark, heavy clouds, but the appearance of the moon always soothes this feeling;—never liked to see the ugly, black ones, because they brought thunder when it rained (F. 19);—greatly worried at seeing a cloud in the sky, and would run to the house; she inquired every morning anxiously, "will it rain to-day?" When rain descended would cry violently till it ended (F., at four);—disappointment because the lions, camels, horses, etc., chasing each other would change into something else (F. );—even now, never likes to be alone on a cloudy day (F. 18);—even now feels she would smother if journeying in the clouds (F. 19);—another the same, but, picturing herself inside one and breathing all night;—a clear, blue, cloudless sky was always distasteful, but did not like a very cloudy day (F. 17);—felt clouds meant something undesirable, because rain was coming, hindering her outdoor play or plans;—gloomy (F. 17) and blue (F. 17) when watching the dark;—felt rather afraid, but still that "I would like to sit on them."

The following fears were indicated: that, while lying on the ground looking at them, clouds would fall down upon her, believing them very heavy (F. 5);—that the "smoke" would sometime fall down and smother her (F. 7);—that the lower of the fierce-looking thunder-clouds would certainly fall after piling sufficiently upon each other;—that a terrible thing might occur, for they might descend and envelop the earth, making everything white, so we could not see one another (F. 24);—that the large cumuli or "snow-banks" would come upon and destroy her (F. 22);—that this terror of clouds falling was so great that she would catch her breath; she even now has the same fear while lying on the ground (F. 23, at 8 or 9);— that the end of the world was surely coming, though she mentioned nothing; because, at about five years ago, one evening, she saw a peculiar orange-yellow appearance over

the sky, lasting for quite a while, throwing a strange light over all objects, which frightened her; she thought that the end of the world was coming, from a terrible fear at times on seeing a dark cloud (F. 19);—that something dreadful would happen, without definite idea of what this might be, when the horrible black ones appeared (F. 20);—that the long black ones especially were dangerous; she would run for the house (F. 21);—that there was a fire in the sky; when seeing feathery ones one day, being so alarmed that she called "mamma" (M. 3);—that the angels seen looking at her would report her to God; hence she was restrained from doing many wrongs; to go to bed on nights after thunder storms with sky full of floating dark clouds; they would assume shapes of animals and giants standing just outside the window (F. 18);—(F. 21) was frightened by the face of a man which the clouds always assumed; (F. 16) by an angel seen when about six years old;—two children by the black clouds, associating them with rain and believing God was going to make rain. One of them always felt that if near home she must return there, was always unable to walk about during a shower and muscles would not act even with strong effort. Relief came with the end of the shower.

F., 18, while watching the clouds at sunset, saw a beautiful face look down upon her. She continued looking and was filled with happiness. Suddenly it changed to a face so terrible that she was filled with horror, rushed into the house and went to bed, feeling that there could be no more happiness for her that day. For a long time she lacked courage to watch the clouds again.

F. 18, had no definite feeling except that the clouds had a certain charm and made her want to look at them. She never loved them, or even enjoyed looking at them, as she does at the present time, and always shrank from them at night, because she was afraid they might carry her away, she knew not where.

One is again struck by the variousness of the appeal made by the clouds, or the responses to them. They can arouse impulses that run the entire gamut of feeling; that touch every chord of sentiment, from the smooth and gentle to the loud and terrible. The strongest feelings appear to be those of fear, longing, joy or delight, reverence and awe. The appeal is both æsthetic and ethical.

## Miscellaneous Problems.

The dependence of cloud fancies on special circumstances, characteristics, conditions, times, seasons, associations, etc., have already partly been alluded to by implication.

The importance of the rôle played by certain factors may here be particularized, and amplified or illustrated somewhat in detail. The splendor or color of the sunset clouds should naturally make these a prolific source of cloud fancy. Other

reasons may be; the leisure hour when they occur, the diminished intensity of light, lessening retinal pain, and the small obliquity or visual angle diminishing fatigue.

F., 17. As a child, imagined and continues to do so, the sunset sky as a beautiful sea with the clouds as islands.

F., 22, had fancies about and can vividly recall sunset clouds but can remember dark ones foreboding a thunder storm, which she noticed only because others spoke of them.

F., 6, often watches beautiful sunsets, and once asked if God painted the clouds.

F., 22, enjoyed watching the sunset clouds only.

F., 19, between the ages of five and six, believed that God painted them because they were so beautiful.

F., 20, states that during the last two or three years, the beautiful, fleecy clouds of sunset and the coloring from the setting sun has filled her with awe and reverence because of the mystery of their formation.

One child imagined a fire in the clouds lit up by the setting sun.

F., 18, that she saw in these, "the sands along the shore."

F., 19, when a child, frequently imagined that sunset clouds were all kinds of candy, edibles and ice cream.

F., 18, at sunset, often imagined a fish or animals with which she had come in contact, especially a flock of sheep following their shepherd, seeing even the crook over his shoulder.

F., 21, paid attention to the evening clouds only.

To one, sunset clouds looked like burning houses or forests, owing to the yellow and red; the white ones in the moonlight, like great castles, and again Eskimos walking on mountains of snow; and just before or during a thunder storm she was reminded of a black man walking on a hill.

(F.), often regarded the beautiful red tinted sunset clouds as a very distant, most magnificent palace, whose every occupant was always happy; but the soft white clouds were always angels hovering about and the very dark ones concealed some horrid monster. One observer saw cities and seashores oftenest at sunset, but mountains in the white clouds.

Another always watched for the rain-man and thunder-man, who fought battles in the dark clouds rapidly forming before a thunder storm, imagining the rain-man whipped and his tears making the rain.

One child saw forms only in the light clouds; the dark ones frightened her.

F., 22, liked white clouds better than gray ones; she was sorry when a clear white cloud joined a dark one.

F., 20, was fond of watching the light fleecy clouds though the dark ones were far more attractive to her. She watched them only in summer.

To F., 21, clouds with a beautiful silver lining seemed to burst open and throw out hordes of wild animals.

F., 18, saw billows and furrows in the high streaked white clouds only; snow banks and animals in the large white masses, but piles of white stones, of all sizes, in the small scattered ones.

F., 17, saw white marble palaces in the white clouds upon which the sun was shining brightly.

To F., 18, the clear blue sky with a few white clouds always seemed like the water at the seashore on a summer day. With less blue in the sky, she saw chariots and faces, but during a storm or just before one, she thought of fierce wild animals, and a thunder storm brought up a vision of contending armies, the lightning being the flash of their swords.

One watcher saw large men flying from the storm in the black clouds. (F. 19), said the blue clouds always reminded her of a blue silk dress she had when very small.

One observer (F.), only recalls noticing cloud colors, doing this especially when the snow was on the ground; she considered the blue as blue velvet, the white as white fur, the former being the background, the latter the trimming.

One's favorite watching-place was the seashore;—another's, the lake;—one's, a certain hill;—another's, a hammock.

One scarcely watched them except when riding;—two, only in the summer;—one, most frequently with her sister, lying on a laprobe placed on the clover;—three, lying on the ground.

*Positional time.* At what period does the cloud impulse reach its hey-day? The evidence from the reminiscent returns is of this character. The vague term "used to (see, imagine, think, feel, enjoy, etc.)," was employed 61 times; "often," 34 times; "sometimes," 26; "still do," 25; "always," 18, and "when I was a child," 32. Nearly all of these refer to the more generic, or hum-drum, experiences, and none furnish any clue. Neither do the following: "once" (15), "one evening" (6), "one day" (6), or a special day mentioned (4), "one morning" (2), 32 in all; but, unlike the former, these are all specific; they are indelibly impressed upon the soul, owing to their striking character. But in no inconsiderable number, 52 in all, the experience or experiences, not at all specific, are located in time. We may arrange these guesses in five groups according as the time is stated (1) as at "*about*" year *a*, 18 in all, averaging 8.4 years; (2) as "between" or "from" year *a* to *b*, 16 in all, averaging 5.5 for the lower and 9.4 for the upper year; (3) as not "until" or "before," 9 in all averaging 10.7; (4) as at year *a* "or" *b*, 6 in all, averaging 9.6 and 10.6; (5) as at year *a*, 3 in all, averaging 8. The total average is nearly 9 years (8.8), which from these records, appears to be the period when, if not at their high-water mark, these fancies are the most easily recalled or precisely located. The true value, if such can ever be found, would perhaps be pushed lower down the scale. In reminiscences, the discrimination would be against correctly locating the most distant, not the most recent.

*Origin.* The school of Kühn and Max Müller place the substructure of mythology in language. Myth in Greek signifies originally, merely something spoken, a word. It is so deter-

mined by language as to be, in a sense, a "disease of language." Words may become agencies, reacting upon the mind, shaping its concepts, creating its fancies, formulating and crystallizing its beliefs. In myth making the elements of highest, operative efficiency are synonymy, polyonymy, poetical metaphor, the gender of words, etc. The effect of these factors is observable in the mythopœic processes of present-day mythology.

Tyler, however, and the school of anthropologists which he represents, look for the foundation of mythology in real and sensuous analogy. It conceived, in analogical projection, that forms, colors, objects are assimilated, associated, compared with other similars and often invested with their nature. Hence the same mythic processes may be traced in the savage mind of to-day or, though perhaps in diminished degree, in its analogue, the child's. And let us not forget a fundamental mental propensity of the modern disciplined mind to hypostatize the concept.

These two points of view are antithetical only in semblance. Both appeal to the same psychological fundamental, the apperception center. Both may furnish an empirical basis or criterion largely applicable in the present attempt to trace the origin of cloud fancies.

It may be willingly conceded that this procedure of linguistic interpretation is not a faultless index, that, at best, it is acceptable only under proviso, that, in many cases, it may not adequately portray the actual empirical processes or psychoses involved in these visions, phantasms, or imaginings; for these states of mind are often so penumbral, quasi-conscious, or submerged, or such vague borderland, revery, or dream-like phenomena, that the process that strives to give them utterance not only misconceives their interior essence, but is itself a "blooming confusion." Thus much such phrases as these, conned from the returns, indicate: "I think that I really believed what I imagined I saw as real," "it seems to me as if I might have fancied that I thought of it as," "I knew they were not, but actually always thought of them as," "it seemed to me that I seemed to look at it as being." These phenomena, however, are not all fancies of this vague type.

In forty-six cases the expressions were simply a clear cut "I saw," or "have seen," or "could see," or "would see;" in seventy-three, "I thought," or "always thought," or "used to think," or "think that;" and in seventy-eight, "I imagined," or "fancied," or "pictured," or "represented," or "tried to do this," or enjoyed doing this." But they are not even all pure fancies, or intentional fictions, as the latter terms especially would indicate. There are a few instances, nine in all,

where the writers avow their firm conviction of the reality of the fancy concerned. We may assume that many remained reticent on this point, thus greatly reducing the figure.

Eighty expressions were used involving comparison, such, *e. g.*, as "looked, appeared, or seemed likely, associated with, was suggested by, thought of as." In these cases, it is safe to say that the principle of association or apperception furnishes an adequate explanation.

The following are specific cases, in addition to those already given in previous sections, in which this principle is of undoubted validity.

Many could, did, or always would imagine the scenes or form the images of characters or places from stories heard or read;—one, (F.), usually never seeing any but these;—one, (F.), imagining especially those in Grimm's Fairy Tales, *e. g.*, Cinderella, and certain Bible stories, *e. g.*, people with animals going into the ark at the time of the flood;—two, (F.), especially those from Mother Goose Rhymes, *e. g.*, the cow that jumped over the moon, the old woman who went to sweep the cobwebs from the sky, Taffy was a Welshman, etc.

F., 16, felt greatly surprised when told that she merely fancied the things she saw.

F., 21, felt that her forms were not strictly original but like the pictures in books.

F., 21, would sometimes see white horses hitched to a chariot, with a great king as driver like a picture seen in the Bible.

F., 19, imagined she could see Pegasus, the winged horse, and his rider, Bellerephon, flying through the clouds.

To F., 22, fairy tales suggested that Queen Mab and other fairies had beautiful, shining horses beyond the clouds, of which she could get glimpses at sunset. She knew that it was visionary but it still gave her much pleasure.

F., 17, thought that the "Great Bear," of which she had heard, was made of clouds.

F., 19, as a child, saw "Old King Cole" smoking his pipe and his slaves bringing his fiddle.

F., 17, after her first geography lesson, saw North America in the clouds on her way home from school.

F., 15, while studying clouds in geography, imagined them assuming shapes of continents, sometimes one cloud showing them all in succession.

Another student of geography saw the sand storms, about which she was studying, in the dark clouds.

One child, after being told that the "hump-back mountain," plainly seen from her own home, was Mt. Tom, looked into the sky and saw a cloud of that shape, calling it Mt. Tom.

Another could see the details of the mountain scenery, even the roads, of her Vermont home.

A school girl on her way home pictured the battles of the Civil war, with guns, soldiers, etc., she had heard recited. She

was so interested in watching the cloud-battle that she ran against a man proving to be an uncle she had not seen since one year old; the scene is just as vivid to-day. Another saw armies marching in battle array, and fighting as never one could fight, suggested by pictures of battles where the smoke from the cannon rolled about in vast volumes;—(F. 23), once, at about eight, after reading her Sunday school lesson on the resurrection, saw a very large and beautiful pearly cloud resembling a figure in flowing robes; she immediately connected it with the "Risen Saviour;" for a long time she was awe-struck; she watched evening after evening for another similar sunset cloud, but has failed to this day.

(F. 16), at about five, after the clouds had cleared from a cyclone, saw the light, foamy ones on top with a layer of darker ones beneath and thought the cyclone, the sky's egg-beater, from seeing, a few days before, an egg beaten in a glass dish, leaving the heavy or only partly beaten part in the bottom.

The following instances of personification, anthropomorphism or symbolism are too complicated for the principle of suggestion to adequately account for them.

F., 18, considered the clouds and winds as enemies, the latter driving the former around with a stick; when indifferent, they were white, when angry, black.

M., 3, thought that they were actually walking;—F., 19, that they were brothers and sisters trying to catch each other, finally becoming an immense cloudful of rain;—that they were real people and animals;—F. 22, that they actually chased each other across the sky;—that they grew tired.

Thus a very large proportion of these phenomena may be traced to suggestions derived from external nature, to tales or stories read or heard and to the nursery yarns of old grannies.

How many are due to reversions, or ancestral adumbrations, as automatically operative without any external prompting, is a question opening up a wider phase of this inquiry.

### Sec. 2. In Literature (Mature Adulthood).

In a field with a literature so voluminous as that on clouds, an attempt at condensed compilation must follow a set of certain rather rigid principles of selection, determined by its avowed purposes. With purely physical cloud determinations we are not here concerned; but with facts or opinions illustrative of their psychic influences, potentialities or possibilities, interpretations and significations. The object will be to fully represent the views of the writers, though often in quite different phraseology.

The point of view is the poetico-æsthetic. As Huxley[1] has

[1] Aphorisms by Goethe, T. H. Huxley: Nature, I, 9. London, 1870.

well said in commenting on Goethe's aphorisms on nature. "Long after the theories of philosophers are obsolete, the vision of the past will remain as a truthful and efficient symbol of the wonder and the mystery of nature."

No pen could be sufficiently under the spell of the magician to adequately paint, by word or pen, the marvellous æsthetic effects possible in cloud-land. The grandest of these are not work-a-day occurrences, but separated by the span of months, years, decades, or generations. Happy he who is prepared for and counts their brief and unheralded visitation. In the following references to remarkable occurrences of cloud scenes, the names are mostly those of meteorologists, who are not expected to record thrills of æsthetic delight and ethical expansion, but explanatory hypotheses. Accordingly, however luminous, these declarations certainly do not overrate our standpoint, but quite the contrary.

[1] Piazzi-Smyth mentions two large clouds with smaller ones of brilliant iridescent colors, seen Dec. 11, 1885, at Edinburgh, about sunset. They were 10° or 12° high and the largest one showed a diagonal streak of glowing green shading into blue, with exquisite violet tints on either side, and the whole surrounded by dull red. With the sky peculiarly dark and sombre, behind and around, the magnificent spectacle suggested mother of pearl inlaid in a black tea-tray. The phenomenally bright smaller specks gradually lost the green band while passing into yellow and orange. These masses were higher than a neighboring heavy cumulo-stratus cloud.

[2] Clark states that this new phase of cloud glow was fringed with prismatic colors, in threefold layers in some places, and he distinguishes its stages.

Backhouse,[3] of Sunderland, saw the same marvellous appearances daily from the 6th to the 13th, except the 9th, though the effect was striking only at sunrise and sunset. He saw no dark clouds; they appeared thin, like a flattened sheet, arranged in bands like "Noah's Arks," somewhat striated transversely. On some afternoons they had a faint smoke-like tail on the eastern side, resembling an aurora, though horizontally placed; the shapes approached rectangles, one being a perfect right-angled triangle; the motion was slow, the height considerable, the appearances altogether unprecedented.

The Derby Express[4] characterizes the appearance seen at

[1] Iridescent Clouds; Piazzi-Smyth: Nature, 31: 148. New York and London, 1885.

[2] Iridescent Clouds; Clark: Nature, 31: 148. New York and London, 1885.

[3] Backhouse: Iridescent Clouds. Nature, 31: 192-193.

[4] Same, p. 193.

sunrise on the 11th, as a dense pallium of cirrus cloud, appearing like a spindle-shaped, elongated opening some 30° high, exposing an intensely emerald sky, which at about eight o'clock was replaced by a "mass of brightness comprising all the prismatic colors" arranged in transverse bands, shading gradually into each other, whose shape resembled a "huge many-colored eye" set in a uniformly dark cirro-stratus. A patch of brightness upon a silvery gray background remained for some time after sunrise.

Ianson of Darlington, who saw three distinct and two faint bands, on the 13th at 4 P. M., regarded the colors as due to interference of light, or residual and not prismatic, the lower being light purplish pink shading into green, and those adjacent the bright brick red of Newton's rings, the remainder being pink and green.

Watts, on the Yorkshire Wolds, on the 6th and 13th between three and four P. M., saw only the edges of the rifts tinged with rose color. Geelmuyden, of the University observatory, Christiana, where the phenomenon was also observable, points out five previous similar occurrences between 1871–1882, and notes that the most striking effects have appeared when mild dry weather has set in after frost. A year later, occurred another exhibition of irridescent or nacreous clouds, wonderful in its changing beauty.

Hollis[2] regarded these peculiar brilliant and attractive sunset glows as a new phenomenon.

In Greenhow's[3] observation of the magnificent display of iridescent clouds, the prismatic colors were strongly marked, the pearly brilliance of the delicate cirri, intensely striking, all in a setting of orange afterglow. Backhouse[4] was struck by the magnificence of the three or four colored spectra, chiefly pink and green, projected upon a purple sky. Unlike the phenomena of the previous year this exhibited no straight contour lines and there was little blue in the coloring. According to Piazzi-Smyth[5] the yellow, orange and vermillion reds were lacking, while blue, violet and rose-pink dominated. The lower portion of the sunset sky presented a gorgeous panorama of the yellow clouds with red variants. In seven letters, reprinted from the Scotsman, one writer expatiates on the large number of minute rainbows, "no larger than the sun appears," with red, orange, yellow and green distinctly dis-

[1] Geelmuyden: Iridiscent Clouds. Nature, 31: 264. London and New York, 1885.
[2] Hollis: Sunset glows. Nature, 33: 198-199. London, 1885-86.
[3] Greenhow: Iridescent Clouds. Nature, 33: 198-199.
[4] Backhouse: Iridescent Clouds. Nature, 33: 198-219.
[5] Piazzi-Smyth: Iridescent Clouds. Nature, 33: 198-219.

cernible; one on a band of high light cirro-stratus above a clear belt resting upon a heavy bank of storm cloud, which was fringed on the sunside by most vivid and delicate prismatic bands, blue outside, red inside, the latter spreading into a "splendid band of violet;" one, on the inexpressible beauty baffling description of these noble effects seen in the morning and evening; one, on how the water glow deepened as it ascended to a dark crimson or purple, and how the cirro-stratus, bright and luminous above, was encircled with rainbows—the most beautiful cloud display which he, an observer of the heavens for thirty years, had ever witnessed.

[1] Davison delineates in detail the progress of this enchanted sunset, how the forms and colors changed, though the group remained apparently stationary, and Stevenson,[2] the sunrise, whose banded colors excelled at times the brilliancy of the rainbow.

The effect noticed a couple of days later—crimson-flushed bands of light cirri, glorious and iridescent upon a background of blue, the rapid changes of the varied colors—Davison found it impossible to describe; it surpassed all previous glories seen by him in the sky. The following traces the stages of the changes of one cloud for a few minutes only.[3] 4.5 P. M., right end hazy; then follows green, yellow, orange, and red; blue, green, yellow and red; red tinged with purple; bright purple; and red and green.

4.11, both ends hazy; pink in the haze, and blue; yellow, green, and orange; green; red, blue, red; ending in green in the haze.

4.18, longer and narrower; green; green, yellow and orange; green; red; green; red.

4.21, the orange band (3) invading the green band (2).

4.22, the red band (5) growing brighter.

4.25, red and orange bands (3) and (5) spreading and becoming like the predominant colors.

4.27, general hue reddish orange, the orange and red bands much brighter than the others; light haze; hazy; red; green; bright red; greenish; orange red.

These changes continued till 4.36, when a rising cloud obscured them.

[4] M. C. Carinsel states that these appearances are common in Switzerland during the winter season and finds the cause in "diffraction of light by fine particles of ice."

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[1] Davison: Nature, 33: 202. London, 1895.
[2] Stevenson: Nature, 33: 220.
[3] The order is always from left to right.
[4] On these effects consult also:
Nature, 33: 219-220, 292, and Nature, 35: 533, 581.

Another effect evoking great interest, resembling the iridescent only in height and brilliancy, are the luminous night-clouds[1] which are usually noticed in the northern quadrants, but are also seen in the southern as startling displays of white "aftersheens" or silver blue cirrus cloudlets. They are apparently seasonal.

Piazzi-Smyth, on issuing from the observatory at 12 o'clock, one night in July, when there is usually a colored twilight above the sun's locus, was "surprised and even startled" at the sight observed. It suggested a great city on the plains of Fife in a state of fierce and extensive conflagration. The awful burning redness at the horizon was topped with lemon-yellow, and this by even brighter silver-blue cloudlets, whose innocent color and gentle beauty "exorcised the horrid idea of malignant flames devouring the works of man." He considered this some phase of auroral display.

To behold cloud pictures, says a writer, one should be "drowsy, dreamy, full of fancies," and through a sort of imaginative intoxication "ready to mould shapes corresponding to the ideal types in the mind." Thus one may behold in the sunset, "green islands in golden seas, with promontories and headlands jutting out into bays of amethyst, encircled or overhung by mountains, towering in rainbow tints to the empyrean," and every moment brings a new delight in the glorious spectacle.

He describes a likeness of the celebrated Olympus, seen once, so stupendous a picture and so "excelling in vastness, grace, beauty, and rapturous sublimity," any work of art that his whole being was thrilled with a sort of ecstasy. Magnificent cities, arches, domes, spires, columns, temples, theaters, mountains, uplands, rocky projections, defiles, eminences with trees, hanging crags, were all luminous, kindled with flaming splendor. Upon the huge vaulted roof in the Mediterranean sky, a traveller, on ship-board, beheld a fleet in full sail with hulls upward and masts and rigging downward. He knew that it was the armament of England pursuing the fleet of the French and Spaniards which, at that time, was cruising near Barcelona.[4] The beauty of such a scene consists in the exact reproduction of shape and size, the faithful reflection of colors and the great multiplication of objects. Armies may also be thus reflected from the clouds. Hence the superstitious age of tradition mistook these for spectral hosts, flourishing their

[1] *Cf.*, Nature, 34: 192, 239, 264, 311. Nature, 40; 151, 544,
[2] *Cf.*, Nature, 36: 245. Nature, 46; 589.
[3] *Cf.*, 39: 537.
[4] Pictures in the Clouds: Chambers Journal, XLV, 820. London, 1968.

weapons while charging each other in the sky, These rumors becoming famous, were transferred to remote countries where skeptics could not investigate them. The Greeks told of such battles being seen by the dwellers on the coasts of Italy and Sicily.

The most sublime cloud scenes are the momentary glimpses, at night, as the lightning pierces and illuminates the thunder clouds. One such spectacle made the peaks, crags, and raging torrents of the Alps seem tame in comparison. The grandest aspect was "a stupendous tunnel, miles in height, and of immeasurable extent, through which the eye penetrated into the very womb of chaos." The sides were "ribbed with columns," the vault "glowed and coruscated with living light," and in the midst of all, thunder pealed and roared in perfect frenzy. The same writer's eloquent description of the Fata Morgana and other glorious cloud pictures repay reading.

Hutchinson[1] records a glorious sight, witnessed twice from mountain crests in India, a vast expanse of purest flocculated wool beneath and pure cerulean above. Most interesting and amusing was another observation of three thunder storms about a mile apart; the storm-clouds increasingly appeared to advance with a business-like, determined resolve to triumph over their enemies in this warfare. The constantly increasing fire of the artillery was the most remarkable fact. He has often stood at the seashore or on deck entranced, and wondering at the mystery and glory of the heaped-up, grotesque, everchanging, snowy cumuli at the horizon, which sometimes spread into illimitable vistas;—approaches, as it were, to the "plains of Heaven." "Can any understand the spreadings of the clouds?" asked Job of old. Can any one witness uninterested and unmoved the delicate, feathery forms of the cirrus, momentarily assuming new splendors without effort, the dark, lowering nimbus approaching in solemn grandeur, fitful, lightning flashes rending its dark recesses; the terrible warfare of battling clouds in the cyclone, manifesting the might of Him "who maketh the clouds His chariot," and "walketh upon the wings of the wind," and the utter impotency of man; the glorious effulgence of tints thrown by the rising or setting sun upon the surrounding clouds?

No vision more beautiful or life-like can be imagined than the city of Madras, on July 18, 1888, as seen for an hour or two, placed upon a flat plain surrounded by a magnificent girdle of cloud moutains, some black and frowning, some snow-clad, as grand and lofty as those boasted of by Scotland or

[1] Hutchinson: Height of Clouds. Knowledge, X: (N. S. II) 268-269. London, 1887.

Switzerland. To approach these was like entering a pass, and again crossing the Bernese Oberland, with alpenstock in hand.

An anonymous writer,[1] finds his pleasure from clouds, which have done service to the poet as objects of grandeur and beauty and to the moralist as emblems of vanity and perishableness, to be due more to their alternations of color than the various movements. The hues are produced from ten colors; the green are rarest, the blue most numerous, followed by red and yellow.

He beheld one evening in the western sky, "a marvellous conflagration of scarlet clouds, delicate lines of cloud of wondrous effulgence, at once bright, soft, ethereal, remote, melancholy, pure, so suggestive, so elevating, so accusing by their extreme beauty and purity, as to lead the mind away to regions of ineffable tranquility and light unsullied; so that on its return to the gloomy earth it can but mourn the ills and sorrows of men."

Characteristic of the sky is its diversity and grandeur of scenery and the daily changes in the color, shape, height, and aggregations of clouds.

The stages of the sunset are, first, an amber warmth, slowly deepening to orange, then imperceptibly changing to scarlet, then, that hue of crimson, above all others, pure, soft and pensive as the luster floods the west and completes the magical chord of beauty of inexpressible, clear, shadowless color.

The writer bemoans the apathy with which people generally regard the flushed heavens, the burning filaments of clouds, their wild contortions: to call attention to their wondrous beauty elicits either surprise or disdain. He expresses the desire of following the sun around the world to obtain one continuous sunset.

Once or twice in a lifetime, the sky may be flecked with "minute cloudlets thick as falling flakes of snow," from horizon to zenith. If the light catches this at right angles, a scenic display results outdoing any earthly pageantry. At these blazing wings of seraphim one gazes entranced with awe and reverence, mute with wonder and delight.

He describes in eloquent phrase the various cloud formations under varying conditions, and feels, on beholding the glorious clouds of dawn, his heart partaking of the "lightness of the air." Ideas of cold, discomfort, loneliness and solitude are instinctively associated with the wide uniformity of water and cloud on a rainy day at sea. Earth presents few images of such desolation and cheerlessness.

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[1] The Highway of Cloud. Littell's Living Age (from the Dublin U. Mag.,) CVIII: 305, 314.

"Oh, for the wings of an albatross, to sweep the trackless wastes of air and gaze unlimited over the wide floor of ocean below, and cleave the clouds on a flight of a hundred leagues!"

The desire to soar to the "spirit-land of ineffable tranquility," on beholding the distant cloud islands in the azure, "fair of form and full of repose," "comes like an instinct."

Another writer comments that of the two landscapes always visible to man, earth and sky, the upper and finer seems reserved for birds and poets or for an occasional forlorn face that turns from earth to sky for fairer hope or justice. Occasionally a person is found watching the night skies, but who gazes at the clouds by day?[1] This indifference should be overcome. By using an appropriate camera obscura, a lens in a box with dark curtains, or the Claude Lorraine glass the vast landscape is brought to a convenient focus, "mellowed and softened."[2] A glass clouded with a colorless smoke-tint will answer. This protects the eye from the intense light of the noonday, and will open an avenue to a new world of glorious celestial cloudscape.

One should become a deliberate cloud spectator, as at a theater. "There are wonderful mountains among them, with sheer precipices, and shadowy caves, and Alpine crags; dark towers, such as Childe Roland blew his blast before; minarets and domes, with mysterious arabesque of oriental tracery; serene ocean shores, where the gray sand glimmers through a shoaling blue, and the round-breasted galleons sail smoothly over."

Gazing continuously and dazzled into the upper sky for some time, "the color, or the very depth and boundlessness of it by and by seem to inundate one's brain." "Delicate brain-fancies float and feed tranquilly in this inflooding tide of the blue heavens." "Nor is all this without its possibility of solid scientific usefulness. It suggests profound problems of a scientific character."

Sometimes the clouds make faces at each other, merry or solemn according to the mood. Both on wall paper and in cloud-tapestry the profiles generally look from right to left. I perpetually see faces in this wise. Is it because one sketches profile with the right hand, with the projection accordingly to the left?

The clouds are nearly always calm, peaceful and quiet in comparison with their restless analogues the ocean waves,

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[1] A Rhapsody of the Clouds. The Atlantic Monthly, LVII, 254. Boston, 1886.

[2] The Poet Gray is said to have always carried a common lens on his daily walks that he might always obtain an image of the landscape.

though they are never still. A fine description of the scenery of the thunder storm is most realistic. "Suddenly a flash of lightning may reverse the light and shade, the gloomy cloud walls gleam out intensely luminous, while the towering shaft of intervening sky is dark by contrast and so starts forward tangibly from the distance, like a momentary incarnation of some black genie of the Arabian Nights."

We may gaze upward at the cloudless sky-dome elevated to its serenest height so long "that we drowse a little" or seem to lose ourselves in space, a second sleep, "the floating out of consciousness into the deeps of outer existence." It is, thus, not wonderful that one's "reason gives way to fleeting fancies; our reveries run into them."

Tennant[1] believes that beautiful color fringes, which he hardly suspected were a novelty, because common in his observations, are always present in high cumulo-strati or strati, or along the edges of dark clouds when the sun is shining behind them all, but that they are obscured by the brightness of the cloud, or the glare of the lower air.

To destroy the coruscating glare, he advises suitable dark glass or the dilution of the tints with white light, which at the same time strengthens the tints.

To the immortal Ruskin is due the awakened cloud consciousness of the last third of the century. He strove to arouse men from their artistic lethargy by pointing out the plethora of æsthetic wonders pervading nature's every work. He made cloud gazing a respectable avocation, not for the few but the many.

To him, nature has nowhere else done so much for the manifest purpose of pleasing man, of directly talking to him and instructing him, as in the sky. Yet to this, of all nature's wonders, we attend least. Most people's ideas of it are devoid of pictures rather than the reality. Man detracts from the noblest scenes of earth by his constant presence; but the sky is for all, fitted to perpetually comfort and exalt the heart, and strengthen and purify it from dross. "Sometimes gentle, sometimes capricious, sometimes awful, never the same for two moments together; almost human in its passions, almost spiritual in its tenderness, almost divine in its infinity, its appeal to what is immortal in us is as distinct, as its ministry of chastisement or of blessing to what is mortal is essential."[3]

Turn to the chattering crowd. One says the sky has been wet; another, windy; another, warm. But who can describe

[1] Tennant: Colors in Clouds. Nature, 33: 343, 514. London, 1885-86.
[2] Backhouse: Colors in Clouds. Nature, 33: 486. London, 1885-86.
[3] Ruskin: Modern Painters, 201-203, Vol. I. London, 1867.

the vast sunlit chains of mountain precipices seen above the horizon to-day, or any other day. All is gone unseen, unregretted. Yet "it is in quiet and subdued passages of unobtrusive majesty, the deep, and the calm, and the perpetual; that which must be sought ere it is seen, and loved ere it is understood; . . things which are never wanting, and never repeated; which are to be found always, yet each found but once; it is through these that the lesson of devotion is chiefly taught, and the blessing of beauty given."

The most majestic cloud, the only one usually noticed by ordinary observers, the cumulus, is mostly windless, proceeding with a "solemn, continuous, inexplicable" movement as if controlled by some will, it is in its grotesque and endless divisions and brilliancy, surpassing all color, as "transitory as a dream."

The rain clouds, the "Angel of the Sea," the "spreadings of the clouds," come in the trial or hurricane-storm, "leaning forward, one thrusting the other aside or on top; impatient, ponderous, impendent, like globes of rock tossed by Titans—"Ossa on Pelion—but hurled forward, all in one wave of cloud-lava. Fierce behind them rage . . . . the Rain-Furies, shrieking as they fly;—scourging, as with whips of scorpions"[1] . . . . gorgeous, who are not dead but ever undying.

The chief masters of imagination confessedly derived their noblest thoughts from the flying clouds and not from the beautiful flowers or majestic mountains. Yet the Pegasus of England is swifter, though not often so terrible as the Hellenic. Here he races, darts and dips from crag to dell, not like the gray and withered Graiae, but like a greyhound "following the Corinthian stag with golden antlers."

As observed by Aristophanes these lower rain clouds are distinctive in always moving horizontally in an oblique position with the base sometimes advanced.[2] The following specific characters are ascribed to the upper clouds, symmetry, sharpness of edge, multitude, purity of color, and variety. Owing to the quiescence and multitude of the high clouds they may be regarded as "cloud flocks," "flocks of Admetus under Apollo's keeping." [3]Ruskin calculates, on the basis of the number per row, that he saw 50,000 separate clouds in the field of sight, during one morning. They resembled pine branches with snow on them rather than sheep.

No sensation of number,[4] which is most felt when symmetri-

[1]Ruskin: Modern Painters, 142-145, Vol. V. London, 1160.
[2]Ruskin: Vol. I, 145. (Ed. 1867.)
[3]Ruskin: Vol. I, 113. (Ed. 1867.)
[4]Ruskin: Modern Painters, Vol. I, 216, 221.

cal, can be so impressive as the infinitely numerous bars, lines or undulatory masses of clouds. Not one of their many millions is without its separate beauty, or uniqueness, although types of one symmetrical system.

The variety of color is marvellous; the sky, especially at the zenith, does not retain a uniform color for two inches; one cloud presents a cold blue fringed with milky white; another above it, a purple fringed with red; another, nearer the sun, an orange bottom with an edge of gold, all merging with the sky.

The color depends upon the opacity by which they reflect light strongly, and their sponge like capacity to absorb light. Aristotle and Leonardo noted that vapors looked russet or red "when a warm light was seen through them and blue when viewed in the shade. But flakes of finest scarlet are often seen on deep purple grounds."

Near clouds present only subdued or uncertain colors; distant ones, catching and reflecting the solar rays from beneath, golden, purple, scarlet, and gradations from intense fiery white.

What value ought this attribute of clouds to possess in the human mind? what should be the psychic reactions to clouds? are questions propounded but not solved, by Ruskin.[1]

A writer in the Spectator pays a high tribute to Ruskin for teaching men to look at not merely glance at these pictures which "symbolize in their silent beauty all that is most dramatic in the changes of human life." No battlefield ever abounded in more unexpected turns than this of cloud-land. Now the storm is in preparation; the squadrons are flying in hot chase; the contingents have become a compact army; the battle is on; anon the hordes are suddenly sundered. Presently, the flying squadrons again combine, and thus the story continues.

The clouds mirror, in their varied influence, far better than words, every mood, monotonous gloom, gentle melancholy, joyous brightness; the ties of human companionship and sympathy. They follow us, if we will but raise our eyes, into dreary and squalid places, converting darksome hovels into palaces of light. Another writer laments with Ruskin that the only purpose of the sky interesting man is to bring up a large, black rain cloud, every third day or thereabouts, to water the earth. In popular estimation, clouds are only bags of water for appeasing the thirst of Mother Earth.[2] [3]

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[1] Ruskin: Vol. V, 123-125. (Ed. 1867.)
[2] Clouds: The Spectator, LXIII, 331. London, 1889.
[3] Clouds: Temple Bar, II, 230. London, 1861.

Yet here is a stage with scene upon scene, picture upon picture, glory upon glory. Here may be found the highest manifestation of the beautiful and the sublime. Even apart from clouds, the sky is peculiarly adapted to excite the deepest emotions. The rain clouds are admirably fitted to excite the imagination of the lover of nature. Opaque and heavy, or transparent, wet, formless, with the sun shining and blue piercing through their interstices, they are a highway of the imagination with fresh delights at every turn.

Bigelow[1] regards the clouds, the moving tableau of living pictures, the most beautiful objects of the sky. No work of art can elevate the feelings to so lofty adoration of the marvels of nature as the colored glories of sunset and sunrise. The delicacy of tint and hue in the spectrum focus are second only to the dancing auroral beams, or the "star clusters of the nebulæ in the milky way near the Southern Cross." An illuminated cloudlet may contain a million intersecting rainbows.

Wise[2] laments modern apathy for the beauty of cloud-land. The ancients did not fail to notice it. The Scandinavians erected their creed, gods and goddesses upon it; the storm-cloud inspired the story of the Odyssey and solved the mystery of Œdipus.

The Fathers were profoundly impressed by their beauty, moral motifs and religious incitements. St. Chrysostom spoke of the second meadow, that in the sky, with starry flowers, "the rose below, the rainbow above," more beautiful than palatial roofs; and reproaches men for gazing downward like the swine of earth instead of at the beauteous roof of the Maker, which the poor may enjoy even more than the rich. Yet lack of appreciation of this source of blessing on the part of the rich and the poor,—the latter being forced by the stress of circumstances to regard the matter from an economic standpoint,—is all too potent.

The greatest pleasure in watching the clouds, the feeling of change answering to the changes of the spirit, cannot be reproduced on canvas. The heavenly canvas is supremely democratic; it belongs to him who enjoys it; it is painted afresh daily. The influence of the clouds on the multitudes is illustrated by quoting a number of weather-saws or rhymes, on which Shakespeare's finest descriptions are based.

The English peasant, however, associates the beautiful with the useful. He hypostatises the clouds, names them after natural objects: the "lamb storms" and "pewit storms," signifying the season of yeaning the lambs; the "bullfinch skies,"

[1] Bigelow: The Formation and Motions of Clouds, 495. The Popular Science Monthly, LX. New York, 1901-02.

[2] Wise: The Clouds and the Poor. Fortnightly Rev., I, 570-601. London, 1865.

denoting the "warm vermilion tints of sunset clouds;" the "rock clouds," or the cumulo-strati, the "snow and wool packs" or the cumuli, etc. The symbolism is true—as true as Tennyson's "daffodil sky."

To the shepherds of the plains, of the Iliad facing the sea from high hill-tops, the clouds became a constant source of joy or fear. They joyfully hailed in the summer and spring: the "water-dogs," the "gossamers" heralding fair weather, fearing the "sun-galls," Shakespeare's "water-galls," or the glorious but wrathful broken rainbow patches; "the messengers," "water-streamers" and amber "wheel-clouds," or the "burrs."

To the fisherman's mind the rain is "dirt" from a "dirty sky," the "water-gulls" have changed to ugly "sea-devils," evil portents of tempest, the flying storm clouds to "the flying devil and his imps;" the "dyer's neif" (fist) represents the small purple cloud,—the Yorkshire fisherman seeing the same resemblance as Elijah's servant on Mt. Carmel, "the dromedary cloud," "the hunchback cloud," Shakespeare's "camel cloud," a white, compressed, humped cumulus, foretelling heat in the southern, and cold in the northern hemisphere.

The cirrus is a "cat's tail," the cumulus, a "ball of cotton," the "weasel," "hog," or "wind-hog," the "whale," "bridge" or "feather-cloud," etc.; and "crow buds," "cherry flowers," "tree-clouds," "pigeons," "flying fish," "streamers," "plumes," signifying that in fair weather the cloud-land is the fisherman's meadow, his garden, his fairy-land, peopled by a mighty host.

In Sec. 12, Act IV, of Antony and Cleopatra, Shakespeare takes full recourse to the language of the naïve naturalism or personification of the peasant and the sailor, "who more than any one else recognize the terror and beauty of cloud scenery."

Weather prognostications or forecasts are often based on cloud situations.

The following are typical indications:[1]

A red sunset, fair weather; a red and lowering morning sky, foul (Matt. 16: 2-3); or, in Bacon's words: "red clouds at sunrise, foretell wind; at sunset, a fine day for the morrow," and, "clouds before sunset of an amber or a gold color, and with gilt fringes, after the sun has sunk lower, foretell fine weather;" narrow, horizontal, western past-sunset clouds, rain before 36 hours; brassy-colored western sunset clouds, wind; cold, dark blue, gray and reddish yellow masses, cold and snow;

[1] For a very complete collection, consult Inwards: Weather-Lore, 84-100, London, 1893, from which most of these signs are conned.

[2] Cloud Colors, Nature, 16:43. London, 1877.

Archibald: Clouds and Cloudscapes. Eng. Ill. Mag., XI, 571-575. London, 1894.

light, bright gray with bright edges, hard frost; sharply defined black clouds, rain; lowering and massing together of detached clouds, impending wet weather; after black clouds, clear weather; dark western sunrise clouds, rain on the same day; clay-colored and muddy ones, rain and wind (Bacon).

"If clouds be bright,
'T will clear to-night;
If clouds be dark,
'T will rain,—do you hark?"

Greenish tinted composite southeast clouds remaining several hours, indicate a succession of gales and many rains (Prince); feathery clouds like palm branches or the fleur de lis, immediate or coming showers (Bacon); thick equidistant patches of feathery cirri, definite streaks of alernate sky and cloud, and regular repetitions of the same form, storm; little detached masses of wool, or knotted feather-like cirri of unusual figure, moving rapidly, great disturbances; cirri with bottom level and streaks pointing upward, rain, but if downward, wind and dry weather (Howard); when unusually low and dense, a storm from the opposite quarter, the bar or ribbed cirrus being as good a danger signal as the barometer (Russel); "If clouds look as if scratched by a hen, get ready to reef your topsails then." The "salmon" or "Noah's Ark," stretching east and west foretells a coming storm, but if north and south, fine weather, except in Eifel of the Lower Rhine, where "north and south are the sign of drought; east and west, the sign of blast." The mackerel sky is a sign of fair weather for the day, rain on the next or following.

"Mackerel sky and mare's tails
Make lofty ships carry low sails."

"Mackerel sky, mackerel sky,
Never long wet and never long dry."

"Mackerel scales, furl your sails."

Cirro-cumuli in winter indicate warm and wet weather; a morning sky dappled with light cirro-cumuli, a fine and warm day (Jenyns); clouds rising out of the west, showers (Luke 12:54); clouds approaching and diverging from a point in the horizon, a wind from that or the opposite direction (Best); clouds moving across the wind, a storm in the air; dark ones driving fast under higher ones in a cloudy sky, violent gusts of wind; an increasing white cloudlet of the size of a hand to windward a storm sure (I Kings 18: 44, 45); a fast growing cloudlet in violent motion in the tropics, the "bull's eye," terrible hurricanes; dark cloudlets (broken nimbi) floating against a bit of blue sky, rain before sunset (Prince); cirri merging into cirri-strati and increasing and lowering at even-

ing, wet weather; visible increase of clouds and decrease of clear sky, rain; a clear sky becoming spotted everywhere, an early rain.

In the writings of the Bible Ezekiel's vision projects in bold relief. He saw the heavens open; a whirlwind came out of the north, a great bright-edged cloud, containing a fire with an amber color in its midst, presented four living creatures in the likeness of a man with four faces and four wings each, straight feet, having soles like those of a calf, human hands under the wings on the four sides. The wings were joined two and two and they went forward without turning. The faces on the right side were those of a man and lion, on the left, of an ox. They sparkled like colors of burning brass, appearing like burning coals of fire and lamps; lightning proceeded from the fire, like whose flashes they "ran and returned." They appeared and acted as a wheel within a wheel. The wheels moved with them for these contained the spirit of the living creatures. The noise of the wings sounded like that of great waters or a host, like the voice of the Almighty. A voice was heard above, when they stood and dropped their wings. Their wings were high and dreadful and full of eyes. The firmament extended over their heads like the color of a terrible crystal, and contained a throne like a sapphire stone with a man upon it, surrounded above and below the loins by a fire, bright as the bow in the rain clouds, the likeness of the glory of the Lord. He fell upon his face overcome with terror and the awful majesty of the vision.

John, in one of his visions, saw an angel clothed in cloud descending from Heaven. "And I saw another mighty angel come down from Heaven, clothed with a cloud, and a rainbow was on his head, and his face was as it were the sun, and his feet pillars of fire." (Rev. 11.)

Daniel, in a night vision, saw one like the son of man "coming with the clouds of heaven to the ancient of days." (Dan. 7: 13.)

The significant role played by the clouds in the primitive religious consciousness is attested by the many biblical references to them and the important mission assigned to them.

They are symbolic or emblematic of earthly vanity and transitoriness; man's welfare and prosperity shall vanish just as they do (Job 20: 6); whatever goes down to the grave is "consumed and vanisheth away" as a cloud (Job 7: 9);—purgation from sin; transgressions may be as easily blotted out as a thick cloud (Isa. 44: 22);—the marvellous or inexplicable or wonderful; who can understand their spreadings or balancings. (Job 36:29);—the faithfulness, beneficence, power, glory and pervasiveness of the truth of the Almighty; His faithful-

ness and truth extend even to the clouds (Psa. 36: 5, 57: 10; 108: 4).

His strength is manifest in them. The whirlwind and the clouds are His chariot and he veils His glory behind the clouds. "He holdeth back the face of His throne and spreadeth His cloud upon it" (Job 26:9). His way is through "the whirlwind and in the storm" and the clouds become "the dust of His feet."

By means of a cloud He guided His people through their wanderings in the desert. "And the Lord went before them by day in a pillar of a cloud, to lead them the way" (Ex. 13:21).

The clouds served as a reminder of the promises of the Infinite. "I do set my bow in the cloud, and it shall be for a token of a covenant between me and the earth," (Gen. 9:13.)

It was in the clouds that the Almighty made His appearances. "And the Lord said unto Moses, Lo, I come unto thee in a thick cloud, that the people may hear when I speak to thee and believe thee forever." (Ex. 19:9).

The cloud always covered the tent of testimony by day and the appearance of fire by night. The tabernacle or tent was so filled by His glory, through the cloud abiding upon it that Moses was unable to enter (Ex. 40:34).

While Peter was speaking to Jesus at the transfiguration a cloud overshadowed them, and in the ascension He was received out of the sight of the apostles in a cloud (Acts 1:9).

The Lord is to appear upon the mercy seat in a cloud (Lev. 16: 2); the son of man in the clouds of heaven with great power and glory is to judge the world (Matt. 24: 30; Mark 13: 26; Luke 21: 27; Rev. 1: 7); Jesus declared to the high priest that He shall be seen coming thus (Matt. 26: 64; Mark 14:62); at the resurrection those alive and remaining shall be caught up in the clouds, to meet Him in the air (I Thes. 4: 17).[1]

In the poem "Clouds," by Edgar Fawcett, clouds are brief, lingering moods of heaven's deep heart, "tireless pilgrims," "towering Alpine peaks," "pale plateaus," "pearly gossamers" filming the sky, "scales on fabulous dolphins' backs," "ghostly silhouettes," and "spirits with garments fluttering white" noislessly walking "the great, awful emptiness of the night."

Tabb, in a poem, compares the soul with the cloud, in itself

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[1] The following may be consulted: Shelley's poem on "The Cloud" which is one of the most successful attempts, whether in ancient or modern poetry, to portray what it sets out to describe.

Proctor: Forms of Clouds. (Knowledge II, 178), describes an optical cloud illusion.

Harper's Magazine, 18, New York, LIV, 1877.

devoid of beauty and heaven's light, a foul vapor, a veil of nothingness.

SECTION 3. IN MYTHOLOGY (PRIMITIVE ADULTHOOD).

The word mythology has come to embrace the legends, traditions, sayings and fairy tales of a people.[2] There is no rigid demarcation between these. They all constitute chapters in primitive human reactions to sensations of sight and sound, to things looked at and listened to, things solar, lunar, sidereal, the clouds, wind, rain, dew, fire, mist, storm, thunder, lightning, forests, mountains, the world above and the world below; in fact, to any natural phenomenon capable of exciting the emotions of wonder, awe, fear, reverence, or, in a word, the quest for the secret mysterious core of things, the absolute spirit. Cox[3] defines mythology as "simply a collection of the sayings by which men, once upon a time, described whatever they saw and heard in the countries where they lived." He tells us that we may look upon it as "something exceedingly beautiful, on which much dust has settled disfiguring some parts and hiding others." But we can now sweep aside the thicker layers of this and again behold the true and beautiful thoughts which underlie them. The disagreeable features are but perversions, distorted renderings of the original meaning of words which expressed originally only simple thoughts of childlike men on the wonders of the natural world. In us, as in them, joy and sorrow, fear and hope, wonder and reverence are aroused by the manifold phenomena of earth, sea and sky. The road for the study of comparative mythology was first cleared by Max Müller[4] closely followed by Kuhn[5] who tells us that "the foundation of mythology is to be looked for in the domain of language." Myth, in its original meaning, is merely the Greek synonym for a word; later it came to be applied only to things relating to the gods, the narratives of their acts, descriptions of their abodes and attributes. These were not intentional fictions, though founded on visions, dreams and vague mental states. Ritual was derived from the myth, but only when this had lost its original meaning. Many peoples with a vast storehouse of myths have no ritual at all.

Mythology originates in the psychic, not the external world. Myths are not "figurative explanations of natural phenomena" nor "vague memories of ancestors and departed he-

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Harper's Magazine, 199, New York, LV, 1877.
[2]Cloud. The Childhood of Religions, pp. 96-98. New York, 1892.
[3]Cox: Manual of Mythology, p. 14.
[4]Max Müller, 1856: Chips from a German Workshop.
[5]Kuhn: Die Herabkunft des Feurs und des Göttertronks, 1859.
[6]Brinton: Religions of Primitive Peoples. New York, 1897.

roes." They are neither "philosophic speculations" nor "poetic fancies" but of distinctly religious origin; the insight, though it be but a dim one, into the divine. Their *form* and *expression* are derived from language. Primitive languages materialized thought, for their terms are predominantly concrete and objective. Their generical distinctions are more deeply ingrained and carry with them an idea of reality not found in our purely formal distinctions; an object spoken of as masculine or feminine became positively male or female. Thus the gods were classed as male or female.

Many myths sprang directly from words through paronomy, *i. e.*, similarity in the sound of words (Müller, Kuhn).

In the course of development, myths of one deity were often transferred to another, divine attributes to a human type.

[1] Mythology has its roots in the primitive religious feeling; religion does not develop from mythology.

The meaning of the Greek myths was found by comparing their words with their earliest records, the Vedas, the older Sanscrit having preserved the first forms of the words.

To the Aryans, these stories were not pretty conceits; they believed that all moving things, the sun, the moon, "the fleet-footed dawn" were all endowed with life. And this same belief[2] appears in the nature myths of the more primitive peoples of to-day who attribute personality to inanimate objects, and in the notions[3] of young children regarding their toys.

The bulk of Aryan myths arose from the ideas evoked by the ever varying scenery of the heavens, the myriad changes of the clouds, the brilliant hues of sunset, the tender light of dawn and the shadowy forms of twilight, the dawn being the most prolific source. Some, however, have their origin in human feelings and experiences; and fabulous events have become history, while some simple facts of human experience have been transformed into myths.

To the Aryans, eattle were as the camel to the Arab, the buffalo to the Red Indian; the standard of value, the symbol of fruitfulness, a treasure to be guarded. Their enemy was the cattle thief, their friend the cattle saver. Thus to them, heaven was the great plain over which roamed bulls and cows, symbolized in the fleecy clouds and their strong protector, the sun. The dark clouds were the retreats of the wicked monster stealing the cows and imprisoning them in the "caverns of the piled up mountains," sucking up all the water and shut-

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[1] Religions of Primitive Peoples. Brinton.

[2] Maj. J. W. Powell in introduction to Cushing's Zuni Folk Tales and Stevenson in Report of Bureau of Ethnolgy, 1889-90, p. 68.

[3] *Ped Sem.*, Vol. IV, 129. A Study of Dolls: G. Stanley Hall and A. Caswell Ellis.

ting off light and heat from men. Only by the protector killing this huge black thief (Veda, Vrita, serpent, wolf, black one), could the cows be restored to their pasture. Thus with Indra (Veda), with the storm gods accompanying "comes bellowing, with fire (the sun's rays or lightning) flashing forth and his horns tossing in anger." The monster is slain, the rocks rent asunder and the light and rain released.[1]

The danger of the early stages of human thought lay not in its poverty but in its superabundance of language. The clouds could be "described by a thousand names," each representing one of these countless aspects. Each characteristic could be found, however, in more than one object. The clouds bestowed nourishment upon the parched earth; the cows to hungry man;[2] the same word functioned as a common carrier. The cow was the moving animal, the horse from its speed, was named asvan, and, from its color, harit; and all these names were applied, first, to attributes of the sun and later the sun himself. From this process arose a wealth of metaphor which has resulted in a multiplicity of myths bearing within themselves the mark of their origin.

Cloud myths include not only the cattle of the sun, Nephele, Phryxus, Helle and Pegasus; in Aryan lore the sky represented a blue sea or lake with clouds as ships, of which Charon's boat was one, sailing over it, or swans gliding across its azure depths. Across its surface also glided the "gilded shallop of the sun."

The Aryan's word for cloud and mountain was the same. The cloud and mountain myths are thus often identical. Niobe, a personification of the clouds, has children, the mists, rivalling Diana and Apollo in beauty, and they are ruthlessly slain by the sharp arrows of the jealous deities. Niobe's grief dissolves her into a rain of tears, congealed into ice on the mountain crest. She is also considered a personification of winter, her tears being the thaw due to the sunbeams (Apollo's arrows). The beautiful and wonderful forms of the winter snow-cloud also find embodiment in Niobe weeping herself into a stone on the summit of Mt. Sipylos. The Sphinx, the winged hound of Æschylus, is the black cloud which withholds the rain, the ravens of Odin or Wuotan are the cloud which blast and the cloud which restores the parched earth, "the one causing famine and sickness the other restoring the earth to life."

Many of the Hellenic mythical beings derive their characteristics from phrases relating to the colors and forms of the clouds though many of the names are neither Greek nor Aryan. The

[1] Cloud: Childhood of Religion, pp. 197-109.
For discussion of the different schools of myth interpretation see Saussaye: Manual of the Science of Religion, p. 206.
[2] Cox: Mythology of Aryan Nations.

Graiae and gorgons may be only the gloaming and the night. The ugly face of Medusa is the ghastly vapors of the night.

The first exploit of Hermes, born in the early morning in a cave of Kyllenian hill, after making his lyre was to go at sunset to the Pierian hills and steal the cattle of Phœbus which, however, he was forced to return. Hermes is derived from the same root as Saramâ in the old Hindu or Vedic tales, and the meaning of the myth is revealed as the dawn creeping up in search of the bright cows (clouds) stolen by the night and concealed in its dark caverns. The same root, sar, reappears in Sarpedon, son of Leus, and serpent, a creeping thing. Saramâ thus becomes the soft breeze of morning, and Hermes the wind.[1]

The magic ship of the Norse gods, Skidbladnir, which can carry all the gods of the Teutonic Olympus, but may be folded so small that it can be carried in the hand, typifies the swelling and shrinking of the clouds as the wind carries them across the blue depth of the sky. [2]The Zuni folk tale of the serpent water-god whose mighty length trails across the town and far out on the road as he carries off the maiden who has invaded his waters, but whose serpent scales diminish to a tiny handful as he lays aside his serpent form and becomes a beautiful youth, may be traced to the same source.

The stealing of the golden fleece is but the transference of the sunlit clouds from the gloaming to the dawn. Before this can occur, the light (Helle), in which they basked at sunset, must be entirely extinguished.

The beauty, ferocity and seclusion of the Amazons "harmonize with the phenomena of the clouds in their varying aspects of storm and sunshine."

Clouds take the shape of swans and eagles in both oriental and occidental traditions. The eagles carry Suryâ Bai on their wings through the sky. [3]In the Zuni legend the eagle bears the youth who has become enamored of her to the home of the eagle people in the regions of the sky and, laying aside her eagle dress, appears as a beautiful maiden. The ancient Indians personified the delicate white cirrus cloud flakes into Apsaras[4] bathing in the heavenly lake. Laying aside their snowy plumage and assuming human form they sported in the limpid waters. They are the houris of the Vedic heaven "receiving into their arms the souls of heroes," sometimes descending to earth to become the brides of mortals, but the union is never a lasting one and sooner or later the swan maidens return to their heavenly abodes.

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[1]Cox: Manual of Mythology.
[2]Cushing: Zuni Folk Tales.
[3]Cushing: Zuni Folk Tales.
[4]Apsaras—those who go into the water.

[1]Among the Minussinian Tartars the swan maidens assume both beautiful and loathsome forms. They are the fierce raging demons of the air dwelling in the "raven-black rocks, the seventeenth region of the earth." Sometimes they are forty in number but again they are merged into one, as the scattered clouds mass themselves together and lose their identity in one overspreading darkness.

The classic swan myths are numerous. The Hellenic swan was the bird of the muses and thus of Apollo. At the birth of the golden haired deity, the swans coming from the golden stream of Pactolus circled about Delos seven times. So the white clouds circle around the rising sun.

To the ancients, the clouds were not mere aggregations of vapor but "cows driven to the milking by Hermes, the summer wind; a great sheep with moist fleeces slain by the unerring arrows of Bellerophon, the sun; or swan maidens flitting across the firmament, Valkyries, hovering over the battlefield to receive the souls of fallen heroes; or mighty mountains, piled one above another, in whose cavernous regions the divining wand of the storm god, Thor, revealed hidden treasures." To the Hindus the rain clouds were celestial cattle milked by the wind god. The Aryans saw the clouds as Phaiakian ships with bird-like beaks or bright birds of divine shapes and colors, the light fleecy cirri were mermaids, swans or maidens with swan-like plumage. The Danish Mara, the Hindu nymph Urvasi, her kinsman, the Gandharvas or cloud demons, the cloud nymphs were all discerned in the drifting and ever changing clouds. The Valkyries, Odins attendants, battle maidens, invulnerable and immortal so long as they remained obedient, were, together with their steeds, the personification of the clouds, while their glittering arms were the lightning flashes. At the injuction of Odin, they swooped downward and conveyed heavenward on their white horses over the "quivering Bifröst" the fallen heroes worthy of Valhalla. These maidens were conceived as having dazzling white arms, flowing golden hair, silver helmets and burnished spears and shields. Hoar-frost and dew fell from the glittering manes of their steeds. Myths of the swan maidens are among the most beautiful and widely distributed of all legends. Their variants are legion but through them all runs the idea of the winning of a supernatural maiden by a mortal and the inability to retain her. In Germany and Sweden, the birds are swans or geese; in Russian tales, spoonbills, and in oriental legends, doves.

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[1]Baring-Gould: Myth of Middle Ages.
For Swan Legends see "Baring Gould, Myths of the Middle Ages."
[2]Fiske: Myths and Mythmakers, Boston, 1888.

Among the Esquimaux they are vaguely characterized as sea fowl, and, in the legends of American Indians, they become hawks or eagles.

Akin to the swan myths are some of the repulsive forms found in classic literature. The "bent clawed birds" of Aristophanes, the Harpies who tormented Æneas and his companions, the malignant progeny of the sea god Nereus, the gorgons, with their brazen claws and snaky locks, were personifications of the storm cloud in its more destructive forms and accompanied by hail, icy winds and blasting thunder bolts.

The Aryan myths constantly recognize the close connection of earth, light and vapor. No one myth can be classified as a specimen of one definite class. The language applied to the darkness is applied also to the gloomy storm vapors which appear as the monstrous Polyphemus or as the three daughters of Phorkos who have but a single tooth and possess a single eye in common. These "swan shaped" Phorkides, corresponding in Norse myths to the ravens of Odin, represent two distinct classes of vapors, one inducing famine and sickness, the other revivifying the dead earth; sometimes both are neutral, neither wholly malignant nor kindly. In the Arabian Nights, the roc guarding the huge diamond egg in the valley of diamonds (the starry sky), is the rushing vapor which sweeps across the face of the sun blotting it from view.

In Greek mythology the storm cloud brooding over the earth but rainless, became the Theban sphinx or the Pythian dragon; and the rain clouds, the Hyades or rainy sisters. Almost every mythographer has a different account to give of them. They are the daughters of Atlas and Aithra (the heaven and pure air) or of Oceanas, the water or Erechtheus, the earth. Thus the myths repeat the generation of the clouds,

> "I am the daughter of earth and water
> The nursling of the sky." (*Shelley.*)

their names denoting their fructifying, vivifying and destructive powers.

Nephele, while the mother of the children whose disappearance caused the Argonautai to search long for the golden fleece, is strictly the representative of the mist or clouds, and her two children, Phryxos and Helle, the ether and the bright clear air of day. As Helle wearied with her long journey falls into the Hellespont and is drowned so must the evening light completely die out before the dawn can arrive, and as Nephele returns to her cloud home, on discovering that her husband Athamus (the sun) has wearied of her, so the morning mist vanishes before the glowing rays of the sun.

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[1] Guerber: Myths of Northern Lands.

The effect of color on the emotions is one which, though as yet little studied, is recognized in the symbolic use of color in nearly all primitive religious cults, in the poetic literature of both ancients and moderns and in the love of brilliant color which is characteristic of nearly all primitive tribes. Though little has been done experimentally, the subject is one of great interest and worthy of investigation. While the import of the color varies considerably, it does not exclude some general tendencies.[1] "The white and the blue are usually of cheerful and peaceful signification, the black and the red are ominous of strife and darkness. In many tribes the yellow bore the deepest religious meaning. The Mayas of Yucatan assigned it to the dawn and the east." The Aztecs sang about the bed of the dying "Already does the dawn appear, the light advances. Already do the birds of yellow plumage tune their songs to greet thee." The colors of the sand and altar paintings of the numerous cults of the American Indians all have a symbolic meaning. [2]The Kiowa Indians and associated tribes make the use of mescal (Anhalonium Lewinii) a regular part of their religious ceremonies. The use of this drug is productive of wonderful color visions though its mental effects are extremely slight. So great is the fascination of this color intoxication that, though complaint has been made at Washington by missionaries and others and its use forbidden by law on the reservations, the rite still persists and has become the chief religion among all the tribes in the southern plains.

Nowhere in the outer world can the color sense be more fully satisfied than in gazing at the clouds. There is little wonder that we find the classic myths describing the many tinted garments of Iris, the saffron-hued robe of Aurora, the golden hair of Apollo and the glistening chariot of the sun.

From this analysis of myths we find among primitive peoples a love and appreciation of nature which clothed itself in the images suggested by their environment. Delight in the beauty of natural forms, wonder and awe at her mysterious workings, foreboding and terror raised by nature in her sterner moods, joy and gladness in the clear air, bright sunlight, and fleecy clouds, gloom and sadness under the overcast heavens and shrouding mists, all find their expression in myth and folk tales. The tendency to personify all forces not understood, and to explain natural phenomena by attributing them to supernatural agencies is common to primitive man of all races

[1] Mescal Buttons: D. W. Prentiss, M. D., and F. P. Morgan, M. D., Medical Record, Aug., '96.
[2] Mescal Plant and Ceremony: James Mooney. Therapeutic Gazette.
[3] Brinton: Religions of Primitive Peoples.

and in all ages. [1] "All primitive men are mystics. In their simple aspect, the fear born figments are grotesque shadows or fantastic duplications of actnal things moved by malignant or capricious motives, like those of human kind; in somewhat advanced thought the figments are more complex, and incarnated chiefly in self-moving things and invested with enlarged and intensified autonomy; while in the higher stages of primitive culture the figments are idealized into mystical potencies conceived to actuate the objects and powers of the universe in accordance with impulses and motives such as those observed to control human action."

Comparing the results of the analysis of myths with the data obtained from the questionnaire, endeavoring always to keep strictly within the limits of the facts presented, what correspondences and what diversities do we find? From the data given in the returns on which this study is based we find in 25 cases that cloud manifestations, especially those of storm clouds, roused varying degrees of fear, in some instances amounting to positive terror, and in one case to actual paralysis of the motor functions. In ten more cases disagreeable feelings of a milder character were aroused. In a Study of Fears published in 1897, out of a group of 1,701 persons 44 had fears of clouds and their forms, 603 of thunder and lightning and 16 of fog. The ancient Aryan myths tell us of the fear inspired by Thor, hurler of thunderbolts, of the terror roused by the furious Maruts, attendants on Indra, "who overturn trees and destroy forests," who "roar like lions and are as swift as thought," who "shake the mountains and are clothed with rain," and of the supplications addressed to Zeus who smites with thunder-bolts. The Sioux Indians address prayers to the "thunder being" whom they regard as a maleficent power. Among the children, fear of the black clouds as bringing thunder or some undefined harm, fear of clouds falling and, in a lesser number of cases, fear of being carried off by clouds, are the more typical classes of fears, while many cases are purely individual and traceable to some specific association.[2]

The idea of the dark or thunder clouds as bringing harm is common in the individual history of the child and the history of the race. In the latter it had a substantial basis in experience. In the former, the basis of experience is far too slight to account for the intensity of the emotion aroused, and for its explanation we must turn from the history of the individual to the history of the race. Between the child's fear of being car-

[1] W. J. McGee: Primitive Mysticism. Report of Bureau of Am. Eth., 1897-98.

[2] A Study of Fears: G. Stanley Hall, *Am. Journal of Psychol.* VIII, 147-249.

ried off by the clouds and the myths of Ganymedes and the Valkyries, there may be a possible parallelism but the data is insufficient to warrant any assumption.

The sentiment of longing aroused by the clouds is common both to the child and the adult. In the latter it is usually of a moral or æsthetic nature; in the child it is a definite desire to touch or reach the clouds or to use them as conveyances. For the expression of this sentiment as well as those of wonder, joy, delight, sorrow, pathos, and awe we may turn, not to one myth but to many. Myths of the swan maidens who inspired love and longing in the hearts of mortals by their wondrous beauty, the joyous aspects of Phœbus Apollo, the sorrows of Niobe aud Nephelê furnish us with abundant parallels. Less poetic in form than the classic myth but equally expressive of feeling, though in perhaps a cruder state of development, is the Chippeway legend which attributes the flush of the morning "to a beautiful maiden who is painting herself in her lodge in the sky." [1]

A comparison of the functions of clouds as given by children with the cosmogony of some of the North American Indians furnishes some interesting coincidences. The functions most commonly attributed to the clouds by the children were "to make rain," to protect the sky, "to make the sky look pretty," to hide the sun, to keep us from seeing God and the angels, etc. In the cosmogony of the Sia Indians as gathered by Mrs. Stevenson [2] we find "The cloud, lightning, thunder and rainbow peoples followed the Sia into the upper world, making their homes in springs similar to those they had occupied in the lower world. The cloud people are careful to keep behind their masks which assume different forms according to the number of people and the work being done. Behind these the cloud people are laboring to water the earth. The rainbow people were created to work in Tinia (the sky) to make it more beautiful for the people of Haarts (the earth) to look upon; not only the elders making the beautiful bows, but the children assisting in this work. The Sia have no idea how or of what these bows are made. They do know, however, that the war heroes travelled on these bows." In Sia myth the "Sun-Father" also wears a mask. [3] In the cosmogony of the Zunis obtained by Mr. Cushing, "the warm breath of Mother-Earth blew the white flecks of foam off the primeval waters, so that, meeting the cold breath of the Sky-Father, they fell down in gentle mist and spray, whence came all life."

[1] A. F. Chamberlain: Journal of Am. Folk Lore, Vol. IX.
[2] M. C. Stevenson: Report of Bureau of Ethnology, 1889-'90.
[3] A. F. Chamberlain: Primitive Nature Study, Transactions of the Canadian Institute, VI, 313.

The forms seen in the clouds by children are so evidently products of environment, in many cases being directly referred to their sources, and so varied that the only legitimate inference to be drawn from them is that, while the picture making impulse is common to the child, the primitive peoples of ancient times and the modern savage, the particular forms in which it finds expression are, in large measure if not wholly, due to environment. As it was a natural association for the ancient Aryan to see cows roaming over heavenly pastures, for the Norseman to see ships sailing over blue deeps, so the child today sees in the clouds the animals and natural forms to which he is accustomed, or peoples them with images drawn from fairy tales or it may be from his geography or history lesson.

From the material thus presented how far are we justified in claiming parallelism between the development of the child and the development of the race? (1) The data obtained from the questionnaire returns show that there is present in the life of most children a period when cloud psychoses form no inconsiderable portion of the mental furnishing. So far as can be judged from the limited number of returns, this cloud tropism begins at about the age of five and apparently reaches its maximum somewhere between the ages of ten and fifteen. But the limited number of returns, the fact that they are largely furnished by those of approximately the same environment, and the lack of data for ages beyond twenty-two or three years forbid anything but a provisional statement upon this point. Both myth and folk lore testify to the prevalence of this same tropism among primitive peoples and to its powerful influence upon their moral, religious and æsthetic development. (2) So far as the psychoses are of an emotional nature we find an almost complete parallelism between the history of the child and the history of the race; also that the intensity of the emotion in the child, especially in the case of disagreeable feelings, is disproportionate to its immediately traceable antecedents, a fact which points to vestigial traces of a more primitive stage of existence when man was still at the mercy of the uncontrolled forces of nature.

(3) The anthropomorphic tendency so markedly present in the cloud reactions of primitive man exists also in the child, and though the modern child is early robbed of his illusions, the *feeling* often persists after intellectual assent to its substrate has been destroyed.

The pedagogic value of this cloud tropism is worthy of consideration since it furnishes an almost universally available means for the cultivation of the powers of observation and imagination and the development of the moral and æsthetic emotions. Children in whom the phenomena of the natural world awaken no reactions have been cheated of their birthright;

their imaginations are dwarfed and crippled by disuse, their moral and æsthetic feelings are undeveloped and they are less capable of emotions of awe and wonder, not only for nature but for the power behind nature. [1] "To the solid ground of Nature trusts the mind which builds for aye." He who has never looked with seeing eye on the cathedrals of nature reared by the towering trees or the fairy palaces builded by the clouds, cannot understand the inspiration of the men whose genius raised the cathedrals of the middle ages. He to whom the colors of the sunset sky have never appealed may wander through miles of picture galleries and come away no whit richer for all the wealth of color which the old masters lavished upon their canvases. To him also the door of much that is beautiful in literature is closed, for only nature holds the key. We hear much of Nature Study for children in these days but the 18% of negative returns in the syllabi which have furnished the data for the present study constitute a plea for a wider diffusion of the teaching that shall give sight to the eyes which see not. A half-hour twice, or even once a week, systematically devoted as a regular part of the school exercises, to watching the colors, motions, changes and positions of clouds, would have a practical value in relieving the overstrain of the eyes from close application.[2] The subsequent writing down of all impressions would furnish an excercise in language study and the mental life of the child would be enriched and broadened.

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[1] Wordsworth.

[2] Slightly smoked glasses should be used whenever the light is of sufficient intensity to fatigue the eyes.

# THE CONTACT OF "HIGHER" AND "LOWER" RACES.

By Alexander F. Chamberlain.

The contact of "higher" and "lower" races is at present one of the most important phenomena of human sociology. The writer has here no intention of discussing this subject in all its varied details, desiring merely to emphasize a few points which his own experience with primitive peoples and a rather wide acquaintance with the literature of the question have shown to be of paramount significance.

*The Childhood of the Race.* While we are busy rescuing the individual child from "the clutches of the adult," primitive peoples, who may be said to represent the childhood of the race, are being treated as once he was. We are laboring to prevent "the big fist" of adults from breaking in upon childhood and its evolutional activities; we ought also to labor to prevent the bigger fist of "civilized races" from breaking in upon the like evolutional activities of primitive peoples with even more disastrous results. As childhood was once sacrificed upon the altar of classicism, so there is now great danger of the child-like races falling victims to Anglo-Saxonism. And if they do, the struggle for return to same doctrine will be even longer and more difficult than that which is to-day achieving the complete freedom of childhood and youth from the shackles of Greek and Latin. With our experience of the classic prison for the individual child, we ought not to put the race-children in the Anglo-Saxon jail. The sane spirit that impels us to consider the interests of the individual in matters of education among our own people, ought also to lead us to recognize the rightful personality of every race in the civilization of mankind. If we will not *force* those with whom our influence is greatest, we surely must not those with whom it is least. If we decline any longer to exterminate the criminals in our midst, we surely have no call to hunt to the death the savages of far-off lands. We ought to be as fair to the "naughty race" abroad as we are to the "naughty boy" at home. If we are abandoning the old unscientific methods of treating the one, we ought not to make them the basis of our dealings with the other. The genial first-things of humanity are just as worthy of our admiration in the childhood of the race as they are in

the childhood of the individual. And, as the individual child and children, among us, inspire the greatest and noblest acts and ideals, so ought the civilized peoples to be inspired and stimulated by the child-like races still existing. Silvaticide is no more justifiable than infanticide. To destroy a race is just as great a crime for the civilized nation as to extinguish the life of his offspring is for the individual parent. The child-like races are here for the purpose of preventing the so-called "higher" races from cutting altogether loose from the moorings of the child-ideals, which are really the evolutional ideals, just as the child exists to keep his parents from drifting too far away from the essentially human feelings, thoughts, actions and aspirations. Without primitive peoples, the world at large would be much what in small it is without the blessing of children. Races and nations, no less than individuals, need the inspiration of the child. It is through this only that they shall enter the democracy of earth, which is destined to be the complete fulfillment of the dream shadowed forth in a monarchical age as "the kingdom of heaven." When the final account comes to be written, it may turn out that nature, in answering the question, "Who is greatest among you?" has taken one of the child-like peoples, whom the strenuous apostles of modern civilization affect to despise, and "set it in the midst of them." We deceive ourselves utterly if we think she is going to cast the race-children to the void. They will ever be the bases of her great alchemic processes by which man's seeming dross is turned to gold. Like the individual children they are the essentially and typically human beings, whose lines of evolution, ended as they began, would mean the full development of all human possibilities. Of them we can say, as was said of the individual child, "Whoso shall cause one of these to stumble it is profitable for him that a great millstone should he hanged about his neck, and he should be sunk in the depth of the sea." The curse upon those who ill-treat the child-like races is identical with that visited upon the deceivers and abusers of the individual child. There is a "cry" of the child-like races as well as a "cry of the children." The fate of the national and that of the individual oppressor are one. Both shall have good cause to remember that

> "the child's sob curses deeper
> Than the strong man in his wrath."

*The Victory of the Vanquished. Væ victis!* Woe unto the conquered! How often, where might makes right, has this cry issued from the lips of triumphing armies and peoples at whose feet another lay prostrate. It is the creed of such that the extermination or suppression by physical force of an alien

or an "inferior" race entails the complete victory of the conquering one. Into the limbo of eternal oblivion must pass the vanquished. The peoples whom victorious Assyrians, Egyptians, Greeks, Romans, Spaniards, Anglo-Saxons, have crushed to pieces in their "expansion" are as nothing in the future story of mankind. One race is to triumph. Before it all other peoples must fade. There is no history for them. Their fate is sealed, and the victor race enters into complete enjoyment of the "promised land." The war-like bards of the "higher" races sing their pæans over the "march of civilization" and hymn the deeds of "the strong who went up and possessed the land." Other poets write the epitaphs of the races that have gone to the wall. The closing years of the nineteenth century have witnessed a carnival of such beliefs. Even America has been unable to resist the strain, and has gone in for "the strenuous life," which has alway meant the enfeeblement of political and national morality. The two great Anglo-Saxon nations of the world have lost their heads and joined in a common hunt of the weaker races. They have followed the example of the gilded savagery of Europe and set themselves to the task of destroying *naïve* uncivilization all over the globe. Black, yellow, brown and red races are now the prey of the white to an extent hitherto unequalled in the world's history, because never before so accessible, and because "war as a civilizer" is still blest by the priest to whom the flag often means so much more than the cross. All the inventive genius of modern culture enters into the contest against the "savage," and the eloquence of the forum and the pulpit is eager to excuse and to palliate the wars of "civilization." In every part of the globe the last few years have seen a protest of the "colored" and the weaker races against the white and the strong. In Algeria and in West Africa, in Arabia, in Madagascar, in Sumatra and the Philippines, in Samoa, etc., the story is the same. But the centuries-old struggles of the Achinese, the Formosans, the Filipinos, the Mayas of Yucatan, all tell what a power of resistance these "lower" races have, and how hard the task of conquest really is. The entrance of the Japanese into the list of approved civilized peoples and the failure of the *Culturbund* to parcel out China prove that the "yellow men" are still a mighty force in the world with which the whites will have to reckon after they have "conquered" every tribe of "niggers," whose land or gold they may want. And beside the general assault of the white upon the colored races there is going on a campaign of the stronger among the whites against the weaker, just as deplorable and unrighteous. The tyranny of the Anglo-Saxon is but a more crafty expression of that of the white in general. The

"poor whites" will ultimately fare the worse for this experience with "niggers."

Empires of conquest carry with them into the world at their birth the poison that destroys them sooner or later. There is nothing about the Anglo-Saxon that frees him from the action of this universal law, which applies to every attempt of a people, evolutionarily capable of achieving the same end by peaceful means, to accomplish "civilization" by the unevolutional way of war. War, as Letourneau, who styled his monograph justly "The *History* of War among the Races of Mankind" and not "The *Evolution* of War among the Races of Mankind," since war is not a factor of evolution but an incident of barbaric culture perpetuated in modern civilization, has well said, is always war and its consequences always immoral. War is like alcohol. Its glow is followed by a dangerous refrigeration of the social organism. Like alcohol, war stimulates for the moment, giving a false sense of exhilaration, but, as is the case with alcohol in the system of the individual, this brief and temporary exaltation is followed by a much longer period of depression, which is often of the greatest possible danger. The medicine, indeed, is worse than the disease. The after-effects of war more than cancel its immediate seeming benefits. In the end, war accomplishes nothing of evolutionary value. It often sacrifices the best on the field of battle, and transmogrifies into heroes the least deserving of the race. Most inexcusable and least effectual of all as an influence in human history is war waged against really primitive peoples. War by "civilized" races against the child-like peoples of the world is like war by adults against children. One is as cowardly and as despicable as the other. The retort of the Spaniard, "Why don't you Americans make Russia behave herself?" reminds us of the boy's remark to the adult who sought to rule him by physical force, "Why don't you take somebody your own size?" But as a mere matter of human evolution, the nation that resorts to war loses in the long run. The survival of the fittest must now be achieved by the fittest means. America in the twentieth century A. D., cannot survive by means that failed to keep alive Babylonia in the twentieth century B. C. The old histories, written to the tune of the war-songs of the conquering races, used to tell us that the Slavs exterminated all the primitive peoples of their habitat; the Teutons their forerunners in Germany; the Saxons the Celts in the larger part of Britain; the children of Israel the Canaanites; the Spaniards the American Indians; the Japanese the Ainu; the Chinese the Miao-tse, etc. But the more careful anthropological investigations of later days and the newer spirit in which historical research has been carried on have amply proved the fallacy

of these contentions. We know now how hard it really is to exterminate a people; we are learning to what extent peoples supposed to be utterly extinct survive to influence in no insignificant way the physical, intellectual, and moral well-being of their conquerors and *soi-disant* exterminators. Indeed we can say that the vanquished in war are (when not so few in numbers as to be actually exterminated), nearly always, if not always, the real victors in the end. The peasantry of Egypt have seen as conquerors of their native land the Libyans, the Hyksos, the Assyrians, the Persians, the Greeks, the Romans, the Byzantines, the Persians (again), the Arabs, the Ottoman Turks, the French, and the English,—and to-day their millions are the problem of the latest rulers as, 10,000 years ago, they were of the first invaders. Theosophy and Neo-Buddhism in certain quarters of America show that the myriad inhabitants of India, are not only not powerless in their own land but have extended their influence to far distant climes. The Dutch have "conquered" Java, yet the Mahometan population of that great island has more than trebled in the last half century. On the other hand, after hundreds of years of Christian effort, from the half-mythic Thomians to the most recent Americans, the converts made in India number scarcely more than 2,000,000.

Poland was extinguished, yet the "Polish question" is as acute in Germany to-day as ever it was. The very name of Virchow, her greatest and most representative man of science, whose recent death she mourns, indicates his Slavonic ancestry, and with many other names illustrious in academic, political, and literary activities, serves but to show that the prehistoric "conquest" of the Slavs by the Teutons was really as ineffectual as the modern subjection of the Poles. The physical victory of the Teutons in times past is avenged by a Slavonic triumph upon the high field of literature and science. Rome "conquered" Etruria, but the greatest school of Italian art in the Middle Ages was the Florentine, and it is the Tuscan, not the Roman dialect that has become the literary language of modern Italy. The defeats of the Vadimonian Lake and Volaterra are more than redeemed by the glory of Cimabue and of Dante.

The Anglo-Saxons "conquered" the Celts, yet, in the new land oversea, which they founded, the Scotch-Irish and other Celtic elements form the most noteworthy single influence in national life, and have furnished the United States at least one-third of her presidents, including the distinguished Jefferson. The Celt, also, may claim the present prime-minister of the United Kingdom. Canada, too, although the French were "conquered" there in 1760, has at this moment a premier of

pure French extraction. This is a pretty good record (to say nothing of its achievements in other walks of life) for an "exterminated" or "conquered" people. The Spaniards "conquered," or "exterminated" the Indians in Central and South America, yet in most of the Spanish-American Republics to-day the numerous and important part of the population, in so far as the future of these countries is to be considered, is the element of Indian ancestry (pure and mixed), which in several of them is already the most active and the most virile, socially and politically. The Indians have furnished to Mexico a Juarez and a Diaz (partly), to Guatemala a Barrios, to Venezuela a Castro, etc., all of whom have sat in the presidential chair of their respective countries, besides many other men of importance in science, literature and art. The ultimate destiny of many of these Republics is evidently to be once more controlled and ruled by the descendants of those whom the Spaniards subjected by force of arms. From Mexico to Chile the American Indians are preparing to become the *beati possidentes* in the very presence of their conquerors. The Amerindizing of the conquering race is in many respects only a question of time. There is a very real question here of America for the Americans, an anthropological Monroe doctrine signed and sealed by nature herself. And only the comparative fewness of the Indian population in North America has perhaps saved the Anglo-Saxons from a like fate. And even here the influence of the Indian upon the life, habits, political and social institutions of the intruding Aryans has been and still is much greater than is commonly believed or suspected. All these facts ought to be before us in the final decision concerning the new departure of imperialism. The people of the Philippines are far too numerous to be exterminated, far too ambitious to be mere colonists, far too intelligent not to be able to take advantage of our mistakes and our acts of gross and petty tyranny. We have "conquered" them by mere physical force; they in the end may have their day of triumph if the strenuous activity of the United States, misused as a "world-power," shall result in the paralysis of its intellectual and its moral genius.

*The "Plague of Commerce."* Hard indeed is the path of the "lower" races when they have to be ruled by a modern commercial nation. Of all despotisms the tyranny of commerce is the worst and the one which has least sympathy with the ideas and aspirations of primitive peoples. Politics will strangle a Filipino republic at birth, but commerce will leave a newborn Cuba to die of inanition. The commercialized Christianity of not a few of our eloquent pulpiteers to-day demands the Malay stall for the Anglo-Saxon ox. It was ominous for the inhabitants of "our new possessions" when we bought them

for so many dollars from Spain. From the very beginning the trail of the commercial serpent was over all our dealings with an extremely sensitive people. Even now the strong argument for retaining these islands and "civilizing" their natives is that we are contending for the commercial domination of the world and cannot afford to let them go. The destinies of 10,000,000 brown men and women are to be sacrificed to those of 70,000,000 whites at the mere behest of "commerce." The educational side of the sacrifice is the most lamentable of all. As one may see from Letourneau's *Evolution of Commerce*, the actions of buying and selling are with primitive peoples, not nearly so sordid in character as they are with us. There is not at all the same determination to get the best of a bargain. The legal maxim *caveat emptor* is distinctly a product of civilization. To the primitive mind the pleasure in the exchange is more than the profit by it. There is also a personal element in the buying and selling of the "lower" races that is almost entirely, if not altogether, absent in the commercial transactions of civilized peoples. Against the dictum of the Anglo-Saxon that "every man has his price," we can set the belief of the "savage" that "every price has its man,"—for with everything sold goes the man who made it or discovered it. With primitive peoples the seller is not so soon outlawed or so readily forgotten as is the case with us. Buying and selling, too, are with the "lower" races more closely correlated with social, moral and religious ideals than in civilization. With the savage, the rich merchant had needs be good before his death, not after. It were harder for the rich man to enter the earth of some heathen than to enter the heaven of some Christian peoples. To the "savage," to sell all he had and give unto the poor would be a natural thing to do, not an act of folly as we deem it, in spite of the words of Jesus. Nowhere better than in their buying and selling do the genial character and real humanity of many of the "lower" races reveal themselves. Indeed, if it be said that the civilized peoples of the world are seen at their worst in commercial transactions, it may also be said that in buying and selling the uncivilized are often seen at their best. The colloquial sense of the word to "sell" could never have arisen among a really primitive people. Every traveller who has at all won the confidence of any of the "lower" races knows how free they are generally from the besetting sins of a nation of shop-keepers. The distribution of wealth during one's lifetime is well known among primitive peoples and its egoistic centralization permanently more difficult to accomplish than among civilized races,—often quite impossible. The payment of debts is more a matter of personal, family, tribal, and national honor with the former

than with the latter. Often there is no outlawry of the debt after a certain period of years (as with us), the descendants of the debtor and his family being bound to pay it some time or other. This was the view of the Kootenay Indians of British Columbia and other American aborigines, and the trading companies of the eighteenth and nineteenth centuries had fewer bad debts than have the department stores among the whites. In this connection, it is interesting to note that about the first American word to obtain currency in the Philippines was the colloquial "jawbone," *i. e.*, credit, the first civil transaction of some of the soldiers being to run up a bill with the natives. Ignorance of native customs as to buying and selling on the part of the white purchaser often leads to serious misunderstandings. For there are part sales and whole sales, and sales that bind the buyer as well as the seller. In the first onset of the white commercial spirit the "lower races" usually get the worst part of the bargain. The natives, *e. g.*, sell lands supposing that the whites will observe the custom which allows the former proprietor fishing or hunting rights after their disposal, only to find the new owner thinks he has absolute control of the property he has acquired. Or, they will dispose of them believing that the white purchaser will respect the sacred spots, the graves of their ancestors, etc., but discover, too late, that the surveyors are planning a railroad through the primitive cemetery, or that some official has demolished the old shrine to make room for a summer cottage. Again, it may be that the whites in a country where women do have rights will buy from the meaner sort of men without consulting their better halves; or again, flattering the pride and ambition of some petty chief, will deal with him regardless of the people over whom he exercises not the least authority in such matters. Other worse and more consciously deceptive means are employed. No wonder that the best and most fertile sections of land fall into the hands of the newcomers and the natives are forced back on to the least productive, and their power of survival in competition with the whites greatly reduced. This has been notably the case in the islands of the Pacific and with our American Indians. The white man takes the fat of the land and expects the "savage" to thrive on the lean. The area at the disposal of the natives becomes smaller and smaller by the intrusions of the whites till there is not enough of their ancient heritage left to support them and they must needs soon die out altogether. But even where the race is physically healthy and the number of children per family continues large, the greed of the white man is in no sense lessened and the tragedy of extinction continues to be enacted. With many primitive peoples the needs of the family rather than the whims

of the individual control the distribution of land. With not a few of the "lower" races unused property must be loaned on demand to him who can put it to use. Among a maritime people in the fishing and hunting season (this was true of some of the Eskimo communities) if a man possessed three kayaks and could use but two he was bound to lend the third to some less fortunate fellow. When the Maoris sold some of their lands to the English colonists in New Zealand, at so much per head of the native population, they are said to have come to the buyers after the expiration of a year to ask for the per capita for the children born during the interval. Of course, the whites failed to see the point made by the natives that one generation had no power to sign away the rights of the next. Yet with us modern municipalities are sometimes bound in just this manner. The commercial exploitation of the "lower" races by the "higher" is one of the chief crimes of the present age. To commercialize them is as inhuman as it has been for civilization to commercialize childhood. Both the childhood of the race and the childhood of the individual have a right to be free from the poison of money-making. It is a sad commentary upon our morals that the first American cargo landed in Manila, after the battle, consisted of liquor, and that the first notification of the intention of the United States to hold the Archipelago came in the form of a cablegram from an American firm of liquor dealers to their correspondent in the East. This was a poor showing for a nation bent upon "civilizing" another. It was surely unfortunate for both that the saloon and the soldier went hand in hand. Here, again, the "higher" and the "lower" races met not upon the highest but upon the lowest plane. And ever since the trail of the commercial serpent has been over all our dealing with them. In its last analysis our desire to hold these islands does not spring from any deep-rooted faith in their ultimate nationhood, but from our conception of them as a market or as a stepping-stone to the greater markets of the adjoining continent. In all ages it has gone hard with when "trade's unfeeling train usurps the land." All our well-doing afterwards is needed to "redeem the evil time."

"*Das Ewig-Weibliche.*" The curse of all attempts of the so-called "higher" races to improve the "lower" is the absence of the woman element. Hetero-sexual contact means at the highest point marriage, and at the lowest prostitution. The savages get acquainted with the worst of the men of so-called civilization before they know the best of its women. The best the primitive races can evolve falls victim to the worst product of modern culture. The soldier and the bachelor of adventure demand, as of old, the "maiden tribute" that

belies alike the professions of Christianity and the decent instincts of mankind. The Anglo-Saxon is no exception to the rule which the Spaniard, the Roman, the Greek and the Assyrio-Babylonian illustrated before him. Some very primitive peoples, like the Veddas of Ceylon, know neither polygamy nor polyandry, nor yet prostitution. Whatever fall there may be from their original monogamy will have to be credited to their contact with "higher races" and their civilization. The Malays of the interior of Malacca and the great islands of the Archipelago are more moral than those of the coast, who have been more or less ruined by the "culture" of the seaports. The licentiousness of the negroes of the Cameroons, like their "impudence," increases in direct proportion to their contact with the whites. Since the coming of the Spaniards and Americans in the Philippines adultery has come to be much more lightly esteemed by the native population and ideas of divorce seem creeping in to threaten life-long monogamic unions. In many parts of Polynesia, Micronesia and Melanesia the presence of European and American sailors, soldiers and traders has been a social pest. It was the whites who introduced into Samoa the abominable "temporary marriages," which have sapped the morality of so many primitive peoples in the Pacific and elsewhere. Even where licentiousness is known to have existed previous to the coming of the Europeans (*e. g.*, in Tahiti), immorality was formerly less than it is now. The Eskimo of the small outlying settlements where there are no whites are more moral than those of the larger places where they are to be found. Certain Carib tribes knew nothing of adultery till the white intruders instituted it. Primitive America has tales of sexual corruption by the whites that are as pitiful as the worst of those from the Pacific. Algeria, Madagascar, India, etc., add their ineffable quotas to the list. The frequenters of municipal brothels have created national bagnios in far-off lands. The sacrifice of virtue has preceded both the coming of the missionary and the despatch of the teacher. No wonder the natives have fled from the representatives of religion and science white-skinned like their kindred who have corrupted them. The Bible and the school have been forced into an unholy alliance with beer and the brothel. The needs of the abnormal man have been provided for before those of the normal. The worst face of civilization has been presented to the best face of primitive culture. The "higher" and the "lower" races have not met on the most human plane common to both. The least culture-bearing portion of one sex only among the "higher" has been chosen to initiate contact with the lower. This is a case where half begun is wholly undone. To the ethnological maxim that the test of any stage

of culture is the position of its women may be added this other that the proof of its humanity is its capacity for influencing peacefully other cultures by its united manhood and womanhood. If, as has recently been proclaimed in high quarters, a bachelor is, in the midst of his own civilization, a "moral degenerate," how much more so is he as its representative among primitive peoples. Fatherhood and motherhood are more than school and church. The family is more powerful than the army and the navy. Ambiantism is better than conquest by force, and woman is more than half of ambiantism. The New World ought to set the Old a better example than by minimizing woman as a factor in the "new colonization."

*The Fetish of "Education."* The fetish of "education" thrives on the forced relations of "higher" and "lower" races. When a republic recurs to monarchical methods in its political life it can hardly escape returning to the fetishistic idea in education. A people believing in destiny in matters of statecraft must have an educational panacæa. To "benevolently assimilate" another race, it is necessary to educate them autocratically. To give them the artificial "benefits" of Anglo-Saxon culture, they must be deprived of the natural advantages of their own. We see a whole nation, the individual members of which have so largely emancipated themselves from the thraldom of the idea that there can be no real personal culture without Latin or Greek, flying in the face of evolution, turning the hands of the clock back, and declaring that there can be no real national culture without English. No nationhood without Anglo-Saxondom. The position of the imperialist is even more preposterous than that of the classicist. The latter has the advantage, too, that the mumblers of dead languages must needs be less prejudiced than the political speakers of living ones. That the greatest things of all time have been done by the Anglo-Saxons is no more true than that the wisest things of all time were said by the Greeks. It must be remembered that the Greek called all other peoples "barbarians" and the Anglo-Saxon is a self-constituted judge of "lower" races. Evolution cannot forget, even if man chooses to ignore, what the Greeks borrowed from the "barbarians" and the Anglo-Saxons from the "lower" races. What the Egyptians thought of the Greeks, the Teutons of the Romans, the Japanese of the Anglo-Saxons, the Filipinos of the Americans, are contributions to human knowledge not to be pigeon-holed at the sneer of a philosopher, the anathema of a priest, or the jest of a "statesman." An educational system that has failed to make good Christians cannot be the right substitute for one that has succeeded in making good heathen,—and, what is more, in keeping them good. It is not education in any proper

sense to make another people the *corpus vile* of our discredited experiments. Yet this is the essence of the "education" of imperialism—anything American is better than anything Spanish or anything Filipino. To get an "education" in the Anglo-Saxon "annex" is better than to evolve one independently elsewhere. But these "annexes" are no more satisfactory for subject races than they are for subject women of our own stock. Anglo-Saxons have no more right to dictate the education of other races than men have to dictate the education of the other sex. The one has been a gloomy failure, the other would be immeasurably disastrous. The Anglo-Saxon, who doubts the advisability of putting woman through the mill of the college ought to hesitate before putting the Malay through the mill of a made-to-order school system. A good woman is better than an encyclopædic hermaphrodite. An honest dunce (the scholars being judges) is less a reproach to society than a scientific villain. An upright heathen is to be preferred above a hypocritical Christian. What the world wants is more men and women, not more machine-made Americans. The "education" of the imperialists is a pretty cheap business. Doing up education as if it were a prize package of chewing-gum belongs to the humbug side of Americanism. And there is the best reason for believing that the lower races do not like to be humbugged half as well as Barnum said we Americans do. When we believe that not every Anglo-Saxon youth is intended for an A.B., we ought not to proclaim from the housetops that every Indian, every negro, and every Filipino ought to be a farmer. Compulsory manual-training and pitch-fork English will have the same deadening effect upon the *naïve* and artistic Malay that they have had upon so many Anglo-Saxon school children, their genial kinsmen. To provide a government, a school system, and a religion for another people, and to lime them all with commerce is a three-fold crime, which will not only not "elevate" the heathen, but will degrade us. The nickel-in-the-slot machine ought to have no place in the higher education of man. Put a "nigger" in the slot and take out an American, cannot represent our noblest ideal. And beside the machine stands the soldier on guard for fear some clever Malay might "get on to it" and run off with the whole stock. The core of the real imperialist education is not to let the pupil be free to act according to his knowledge. The net result of our folly in the Philippines will be for us to assume the rôle of Jupiter while the Malay is doomed to that of Tantalus. And in such circumstances education is a delusion and a snare. Education, no more than a nation, can exist half slave and half free,—its motto, too, is liberty, or death. To educate the Filipinos, without using to the full their language and their

literature, the thousand-fold stimuli of their environment, their racial temperament and ideals, their past history and natural ambitions for the future, is to stunt them in body, mind and soul. We have let loose upon them the soldier, the trader, the school teacher, and the missionary,—and we talk about education! The brain-cure we are treating them to at the hands of our teachers is worse than the "water-cure" our soldiers gave them. In education, as in everything else connected with the "new colonialism," we began wrong. We can change, if we will, for it is not altogether too late yet. But it must be a complete change and an honest admission of error. To educate the Filipinos as Filipinos, and not as Americans is the right ideal. Let 10,000,000 Malays as such develop along the lines of their native genius and some day the world will rejoice that they have been. Educate them through themselves and they will become strong, as their kinsmen the Japanese have done, adding a new star to the constellation of civilized races. Who doubts but that the self-education of Japan was better for her than any colonial "annex" of Anglo-Saxondom? Is it not well that she has always been free? Freedom is the natural substrate for education. If freedom fail, education is but dust and ashes. Our nation is just achieving the freedom of the child in the matter of school-life, shall it condemn to educational serfdom the most child-like people the world knows? All that is high and holy we lavish upon our children,—all this and more we ought to give the Malay. It has been well said the child has a right to be a child as long as childhood lasts. It is equally true that the Malay has a right to be a Malay as long as Malayhood lasts. For one as for the other a wrong education is worse than none at all. Self-evolution is more than the best *protégéism*. A Malay by evolution means something higher than an American by the nickel-in-the-slot process. Human beings made by nature, not those unmade by man, give the world the variety by which it lives.

*The Higher Optimism.* Easy is it for the soldier to shout "My country! Right or wrong!" Easier still for the politician to declare his belief that the destinies of a weaker people are safe in the hands of his own. The one tries to depict the "hell of war" as a necessity, the other to excuse incompetent administration as "inevitable under the circumstances of the case." And both soldier and politician assume the attitude of the patriot and decry as pessimism or as treason all discussion and denunciation of their notorious savagery and corruption. They forget that higher than the "optimism" stimulated by the rapid "progress" (not always evolutional) of a great and mighty people, is the optimism born of faith in the essential

unity of man and the right of races, as well as individuals, to be themselves as best they may. They do not remember that more atrocious than treason to any one land is treason to all mankind. A theory of optimism which is all "white" is human in no best sense. Just as Christianity was remolded in the Occident, and may have to be retouched by the Orient before it can become the religion of the world, so the Anglo-Saxon theory of optimism must go farther or it will fare worse. In spite of our self-satisfaction, the teeming millions of Russia, India, China and Japan are to have some say in the shape it will finally take. The yellow peace, rather than the "yellow terror" is destined profoundly to influence the world. The optimism of peace is infinitely higher and nobler than that of war. Better is it to do much good that a little good may come than to do some evil that more good may come. The natural optimism of the heart is more than the artificial optimism of the sword. The world-old heart, not the twentieth century head, should guide us in our dealings with primitive peoples and the so-called "lower races." Else the millions who live by the native heart will die of the foreign intellect. The higher optimism can have no fellowship with the lower education. The eternal good will triumph over the short-lived expedient.

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# LITERATURE.

*Des Johann Amos Comenius Entwurf der nach dem göttlichen Lichte umgestalteten Naturkunde*, dem Urteile der Unterrichtsfreunde und der Gotteslehrar vorgelegt. Herausgegeben, uebersetzt und erläutert von JOSEPH REBER. Emil Roth, Giessen, sen, 1896. pp. lxxxiv+552.

Those who live and work in an age of realism, science, and nature study, owe a great debt to those who ushered in the revival of interest in things. Vives, Campanella, and Bacon all struggled against the headlong debates about what Aristotle said of things. Comenius, however, was the first great realist, who consistently carried his theoretical ideas over into schemes of educational values. Science and pedagogy here first locked arms and kept steady step. Text-books and methods were reconstructed by this pious pedagogue, most of whose works are familiar to every one.

This work on *Physics*, finished in 1632 and published the following year, and passing through several editions during the author's life, is too often overlooked. It is an attempt to bring the explanations of physical science into harmony with the conceptions of nature expressed in the Biblical writings, a not uncommon attitude of mind in the age of its appearance. So much for the author's piety. The work also takes its place in his pansophistic schemes, which grew into an almost mystical elaboration as his life approached its close. But most of all, he here applies his combined method of wisdom, namely that a true knowledge of things, of nature, of that which is created, is derived from sense-perception, reason, and the Holy Scriptures. In describing his realistic impulses and inveighing against the Aristotle cult of his times, he says in the preface: "Do *we* not dwell in the garden of Nature as well as the ancients? Why should we not use our eyes, ears, and noses as well as they? And why should we need other teachers than these our senses to learn to know the works of nature? Why, say I, should we not, instead of these dead books, lay open the living book of Nature, in which there is more to contemplate than any one person can ever relate, and the contemplation of which brings much more of pleasure, as well as of profit? (Laurie.) The pedagogical merit of this work lies not so much in the actual theories of nature he propounded,—although these have their special values in the history of science, of theology, medicine, and culture,— as in the recognition of this great field of human experience, and the partially successful application of method in getting acquainted with natural facts and interpreting them. This in truth is the scientific spirit in education: a judicious combination of *the how* with *the what*.

To Comenius, physics is the science of natural things. The law of nature is becoming and change, action and rest. To investigate nature means to consider how and why everything in nature has arisen. The creation account in *Genesis* is elaborated at length. The three cosmic principles of 'visible' substances are matter, spirit, and light. The movements of these are sketched in detail. The essential qualities of things are sulphur, salt, and mercury, with which are correlated fire, spirit, and matter. The former three are not the common

'earths' known by these names, but something known in idea only; from them are derived the ordinary physical properties of fluidity, hardness, etc. The sensible properties, such as tastes, smells, sounds, colors, are generated from the varying relations and combinations of the three essential elements.

The changes of things, generation and corruption, are treated in connection with the four particular elements: ether, air, water, earth. Water is thickened air. Interpenetrating vapors are employed to explain the various structures given in the earth, as minerals, oils, etc. Winds, tides, earthquakes, stars, meteors, comets, minerals, rain, hail, snow, ice, plants and their parts, animals and their functions, man and the angels are the facts and phenomena taken up successively.

An animal is a moving plant endowed with sense-perception; the moving principle is the soul; nourishment and assimilation. Life is that mixture of the spirits with the blood and organs which produces warmth, sensibility, and movement. The animal and human faculties of sensation and the end-organs of touch, taste, smell, audition, vision; of movement, and expression—the voice, the head and brain, not the heart, are the important factors in animal structure.

Man is a rational animal endowed with an immortal soul. The mind arises immediately from God, and has the three faculties of intellect, will, and consciousness; attention, imagination, and memory are also treated. Angels are considered in this work on physics, *because* they are created as a part of the world, and as standing next to man, from whose nature that of the angel may be easily developed.

The diseases of the mind receive a section. They are simply the vices which produce either unrest or pain, such as the inordinate desires to eat and drink, to increase, to possess; or, the emotions, as sadness, anger, satiety of life. Remedies are to be found in ethics. The soul has diseases: as forgetting God, troubled conscience; numerous addenda to the later editions follow.

This volume, compendiously and exhaustively edited, is another representative of the patience and thoroughness of German scholarship when it attacks an historical or literary piece of work. The translation from Latin to the German—the edition being arranged with parallel texts—seems to be faithfully accomplished. The voluminous notes and introduction increase the great value of the book for all students of Comenius. Besides the *Physics*, the volume contains two short essays: "Investigations on the Nature of Heat and Cold," and "Descartes's Philosophy of Nature Overthrown by the Physicists."

E. F. BUCHNER.

*De la formation des maîtres de l'enseignement secondaire à l'étranger et en France.* Par MARIE DUGARD. Paris, Armand Colin, 1902. pp. 242.

Few writers are so well equipped to discuss the training of secondary teachers as Professor Dugard. She has travelled extensively in the United States and the countries of Europe, and her language equipment includes three of the great languages of to-day—French, English and German. She was the woman representative of the department of public instruction of France to the Chicago exposition in 1893; and her book on American society was crowned—and justly so—by the French Academy.

In a preliminary chapter, Miss Dugard states the problem of the training of secondary teachers, and gives a succinct historic orientation of the question. With the organization of secondary education in the middle ages, as she shows, the need of trained secondary teachers became apparent, although little was really done to meet the need.

Four chapters are devoted to the training of secondary teachers in foreign countries. In Prussia, Sweden, Finland, Austria, Hungary, and Russia the state reserves the exclusive right to train secondary teachers; and in some instances specific institutions are provided for this purpose. In Japan such teachers may prepare in private institutions. In Norway, they may pursue courses at the university of Christiania, Copenhagen, Paris or one of the German universities. In Great Britain, Canada, and the United States, the national governments do not control secondary education, and the training of secondary teachers is left to local authorities.

Miss Dugard notes the important place held by the universities in Germany and the United States in shaping the preparation of secondary teachers. More than half the colleges and universities in our country, she oberves, have chairs of pedagogy. The universities of Scotland and Wales—and to an extent those of England—provide courses in pedagogy for secondary teachers.

Two chapters (and ten appendices) are given to the training of secondary teachers in France. The French policy is much more definite and consistent than that of the United States or Germany. But does it produce better results? The higher normal schools are model institutions; but they train, after all, very few secondary teachers; whereas, chairs of pedagogy, not only in Paris but in all the provincial universities, would bring the teaching science and art and spirit to many more prospective teachers.

The spirit of Miss Dugard's book is broad and the tone is judicial. She is entirely at home with her problem and her discussion of the same is certain to interest many teachers in American high schools and colleges. WILL S. MONROE.

*International reports of schools for the deaf.* By JOHN HITZ. Washington, Volta Bureau. 1902. pp. 56.

Astonishing advance has been made in the education of deaf children during the past one hundred and fifty years. Two names are especially prominent in this reform movement—Samuel Heinicke in Germany and Alexander Graham Bell in the United States. The former organized the movement and the latter has given it most direct tendencies in our own country and time. In 1895 the Volta Bureau made an initial attempt at securing uniform information concerning the progress of deaf schools in the different countries of the world. The present document may be considered a second international report.

The report includes data from 645 schools with the following continental location: Africa, 13; Asia, 18; Australia, 22; Europe, 450; North America, 135; and South America, 7. These schools have a teaching force of 4,734 and an enrollment of 38,722 children, of whom 5,963 have some hearing power and 14,034 are congenitally deaf. The United States, with 126 schools, has more institutions for the deaf than any other country. Germany, with 99 schools, ranks second; Great Britain, with 95 schools, third; and France, with 71 schools, fourth.

The State of Wisconsin in our country and the city of London in England lead in the number of day schools for deaf children. The most significant item in the report is the marked growth and widespread use of the so-called oral method of teaching—that is, articulation and lip or speech reading. But four out of 126 schools in the United States report the exclusive use of the manual or sign method of communication. Fifty-one schools report the use of the pure oral method, and the balance a combination of the manual and oral methods. There is marked decrease both in the use of the manual and the

combined methods and corresponding gain in the use of oral methods. Practically all the deaf schools in Germany, France, and Italy train their pupils to articulate and to read lips. Although composed mainly of statistics, the report is full of items of interest to the student of education. WILL S. MONROE.

*The care of destitute, neglected, and delinquent children.* By HOMER FOLKS. New York, The Macmillan Co., 1902. pp. 251.

Mr. Homer Folks, because of his long connection with the public charities of Pennsylvania and New York and more recently as commissioner of public charities of the city of New York, is able to speak with authority concerning abandoned, neglected, and dependent children; and with such unfortunate youths the present volume deals —a single chapter being given to juvenile delinquency. The scope of the book may be indicated by the chapter headings: 1. Conditions prevalent at the opening of the nineteenth century; 2. Public care of destitute children, 1801–1875; 3. Private charities for destitute children, 1801–1875; 4. Removal of children from almshouses; 5. The State control and placing-out system; 6. The county children's home system; 7. The system of public support in private institutions; 8. The boarding out and placing-out system; 9. Laws and societies for the rescue of neglected children; 10. Private charities for destitute and neglected children, 1875–1900; 11. Delinquent children; 12. Present tendencies.

Four systems are in operation in the United States for the care of neglected and dependent children: (1) The State school and placing-out system, in Michigan, Minnesota, Wisconsin, Rhode Island, Kansas, Colorado, Nebraska, Montana, Nevada, and Texas. (2) The county children's home system, in Ohio, Indiana, and Connecticut. (3) Support of children in public and private institutions, in New York, California, Maryland, and the District of Columbia. (4) Boarding-out and placing-out system in Massachusetts, Pennsylvania, and New Jersey.

The first, or "Michigan plan," with slight modifications, Mr. Folks considers one of the best. The second, or county-home system, he considers bad. "It has been fairly and fully tried," he says, "and has been found wanting." The third system—support of children in public and private institutions has—as Mr. Folks recognizes—most pronounced evils. It encourages parents to throw their children upon the public for support; it brings into existence an untold number of sectarian institutions whose chief aim is to keep the children in a dependent condition; and it makes classification of degrees of dependency impossible. Mr. Folks expresses the hope that the obstacles of the subsidy or contract system may be overcome after fuller and fairer trial. But with the experience of New York and California with their ridiculously large percentage of state supported children and the absurdly high rate of maintenance, even the optimism of Mr. Folks fails to carry conviction.

The boarding-out and placing-out system followed, in this State, seems to the reviewer the sanest and most economical of the four systems outlined. The Michigan plan may have advantages; but it unquestionably has an institutionalizing tendency which is never wholesome for the dependent child. Mr. Folks's book is filled with recent data; the style is clear and lucid; and the author's suggestions are, for the most part, in line with the most recent and best social reform.

WILL S. MONROE.

*The English Chronicle Play*, by FELIX E. SCHELLING, PH. D., Professor of English Literature in the University of Pennsylvania. The Macmillan Company.

This book is, as the preface states, "an attempt to tell the history of one of the many and various strands which, twisted and interwoven, form the brilliant and heterogeneous Elizabethan drama. Shakespeare as a writer of historical plays is, of course, the central point. This class of play is traced back to its threefold origin; the old sacred drama, the pageants of the middle ages, and the early English ballads. Its fortunes in the hands of Shakespeare's immediate predecessors are clearly pictured, as is the relation of its growth and development from the first vague, wavering love of country to the great outburst of patriotism in Shakespeare's youth. We see the crude treatment of the play by the pens of the early dramatists of the sixteenth century, its elevation under Marlowe, although it still retained the faults of "inconsequence and sketchiness," its apotheosis with the Shakespearian transmutation into "sheer poetry," its degeneration under a Scottish king who cared naught for the land over which he ruled, and finally its practical disappearance at about the middle of the seventeenth century.

The value of the book to the student of dramatic literature is increased by an appended list of plays founded upon English historical subjects, wherein by a skillful arrangement of italics and abbreviations a great amount of information is conveyed in a few pages. But this is not entirely a book for the student. Bits of æsthetic criticism add to its interest for the general reader, and here the author shows the acumen of the critic and appreciation of the artist. Dr. Schelling has a special gift in the use of pairs of adjectives so unlike as to give an almost stereoscopic view of his subject. Such phrases as "the staunch and boisterous Puritan spirit," "the saintlike and impotent king," "the politic and unimaginative Bolingbroke," are of the stamp that linger in the memory.

This volume of some three hundred pages impresses the reader as being the result of scholarly investigation and loving study. Many a sentence is dropped lightly into the text which is the summary of a vast amount of thoughtful reading and critical comparison. The conclusions reached by Dr. Schelling are stated with no hesitancy, indeed, but with the conscientious regard for accuracy and moderation that mark his previous volumes. At the first glance the man who loves the blow "straight from the shoulder," may mistake this treatment of the subject for timidity, but whatever may appear lack of boldness is less feebleness of stroke than a carefulness that the stroke may fall in its proper place. EVA MARCH TAPPAN.

*Department of Public Instruction for the Philippine Islands.* Suggestive Course of Study, 1902. Office of General Superintendent, Manila, P. I. pp. 28.

Few publications will be more interesting to thoughtful educators than this course of study. Most of the American teachers who went to the Philippines had to begin almost at the very beginning. Buildings were inadequate or lacking; there was little apparatus; most of them knew not a word of the native language or even of Spanish, and they confronted the great new problem of training the children of an alien and often unfriendly people hampered by distance and sometimes no doubt by military operations and occupations. That they have done hard and faithful work under adverse circumstances can be premised, and that Dr. Atkinson with his great sagacity, learning and experience would leave no effort untried to do the best that was prac-

ticable, all who knew him were assured at the outset, and will trust that the policy he has devised and put in operation will not have been such as will require radical reconstruction by his successors.

We confess, however, in studying his suggestive course that there are many things we should like to hear discussed, and perhaps, first of all, the propriety of requiring English of all and always from the very start. The sentiment in this country would overwhelmingly sanction this course, but those who believe in indigenous development are already persistently asking whether it might not have been better to have sought ways at the outset of developing first in the lower grades, better knowledge of their own language in written form, especially among the Tagalogs. There are an increasing number who hold that the best way to make good Americans is first of all to make good Filipinos; to teach them respect for their own traditions, customs and language, and to require English only in the later grades when it was demanded.

Again, we do not find in this course any answer to the question so often asked: what attitude teachers are to take with regard to the Spanish language already so widely taught and spoken. To utilize all that is good that has been done by Spain should have been one of the chief and great problems. The prominence given to music is interesting. The other two problems that must arise are, whether yet more attention should not be given to the study of nature, which is by no means already unprovided for, and much more to industry. Now that the world is turning as with one accord with a new and fresh interest to all problems connected with agricultural training, it would seem as though here was an admirable opportunity to make this central, developing also other manual arts and effecting a new subordination of language to motor training. No doubt this course was wrought out under very grave political limitations and not unaffected by the presence of the army. But we cannot but regret the prominence, that under the circumstances seems to us excessive, given to rhetoricals, American history and geography, with sometimes the very text-books used here, the English language and readers, and wondering how the hero worship of McKinley and Rizal would work together and how Lyman's Music Course, the Heart of Oak Readers, Guyot's and Carpenter's Geographical Readers, will work when applied to the little Filipinos.

*The Boy Puzzle. A Picture Book for Mothers*, by JOSEPH F FLINT. Pacific Press Publishing Co., New York. pp. 217.

This is a direct result of work with and for boys, to 300 of whom in an industrial school the author preached for eight years. A few of the chapter heads suggest the character of the book: contrasted homes, a bundle of possibilities, leading strings, young Hotspur, a hint from architecture, Paradise lost and regained, a young mother's prayer, the Bible and the home. In a series of illustrations of a symbolic character, the author prints pictures of children's heads and faces containing cuts illustrating their propensities, a little after the style of some phrenology works. The book is of no scientific value whatever, but is a very good book.

*Studies in Education*, edited by Earl Barnes. Oct. 1, 1902. Vol. II, No. 8. Philadelphia.

This number contains articles on children's attitude toward theology, children's sense of truth, children's drawings, children's stories and poetry, and a type study on ideals.

*Die deutschen Universitäten und das Universitätsstudium*, von FRIEDRICH PAULSEN. A. Asher and Co., Berlin, 1902. pp. 575.

This work is dedicated to the student youth of Germany and begins with the German universities of the Middle Ages and traces them through the Renaissance. The second book describes their present constitution; the third book, the university teachers and instruction; and the fourth, students and academic study; while the last book characterizes the four faculties.

*Studies in Education.* Edited by Earl Barnes. Philadelphia. November 1, 1902. Vol. II, No. 9.

This issue contains papers on children's ideas of war, their travel interest, further drawings, stories, poetry and humor, and ideals.

*The Paidologist.* Vol. IV, No. 3. November, 1902.

This is an unusually interesting number with an address by James Chrichton-Browne; an interesting paper by Miss Louch on Some Common Objections to Child Study; another on its Relation to the Home by C. W. Kimmins; Records from a Parent's Notebook; Thoughts on Imitation; Disobedience; Stories; and the usual very interesting and valuable book notices.

*Talks to Students on the Art of Study*, by FRANK CRAMER. The Hoffman-Edwards Co., San Francisco, 1902. pp. 309.

Habit, interest, attention, observation, discrimination, association, classification, memory, reason, impulse, will and feelings are discussed in a concise, general way.

*British Child Study Association.* Proceedings of the Hampton Wick Conference, June 24th, 1902. President, Sir James Chrichton-Browne. pp. 57.

This is a very tasteful and indeed elegant volume on heavy tinted paper, containing officers, aims and rules of the association and the proceedings of the conference on June 24, 1902. It is apparently due to the energy of Miss Kate Stevens, Secretary of the London Branch, one of seven already established.

*Interest and Education. The Doctrine of Interest and Its Concrete Application*, by CHARLES DEGARMO. The Macmillan Co., New York, 1902. pp. 230.

It is high time this subject was discussed, and we opened this book with great expectation. Its early chapters are interesting and valuable, but to our thinking much of the latter part is almost trivial. As a whole, if the book were greatly condensed and with large eliminations made, its value would be greatly increased.

*Manhood-Making*, by ALEXANDER LEWIS. The Pilgrim Press, Boston, 1902. pp. 215.

The author sent to fifty successful business and professional men questions concerning the rigor or freedom of their home government in childhood, whether they received early training in morals, religious influences, favorite books, guiding principles, motives for choice of calling and how their start came; and upon the suggestions which came to him from forty-two answers wrote ten addresses or sermons, which abound in good counsel to young men.

*Autobiography of a Journalist*, by WILLIAM JAMES STILLMAN. Houghton, Mifflin & Co., Boston, 1901. Vol. I, pp. 374.

These volumes have a special interest for educators because they give with great fullness the early life and education of this unique personality.

*Japanese Woman's College.* Illustrated.

Mr. Naruse, who spent some years in this country, in preparation, one of them being at Clark University, has after many years succeeded in realizing the ideal of his life and founding the first government woman's college in Japan. The buildings are light, but extensive, and the class, both of college and preparatory students, numbers several hundred. There are admirable botanic gardens, a dormitory, a laboratory, special college building, director's house, dean's house, gymnasium, a special building for cooking classes, a bath-house, and ample grounds.

*Sloyd,* by GUSTAF LARSSON. Boston, Mass., 1902. pp. 75.

Principal Larsson is without doubt the best equipped, the broadest minded, and most thoughtful representative of Sloyd in this country. No one perhaps in any land has done more to reform, advance, and commend this system to the public. He has done well to collect and print at the request of friends nine of his recent papers which, without attempting to be systematically connected, do present an admirable view of the entire field. This is illustrated by several charts and cuts presenting an outline of the author's courses in detail. The papers give a reasoned account of Sloyd of various grades as a means of education, as an answer to objections, etc.

*Classification for Physical Training,* by J. H. MCCURDY. J. T. Bowne, Springfield, Mass., 1902. pp. 19. Price, 50 cts.

This scheme is the outgrowth of more than ten years of experience with one of the largest collections of works on physical training. It is intended for the use of specialists engaged in the study and practice of this subject. There are more than two hundred and fifty subclasses in the library of Springfield, of which the author is custodian, under which will be found everything bearing upon the topic.

*Constructive and Preventive Philanthropy,* by JOSEPH LEE. MacMillan & Co., New York, 1902. pp. 242.

This work treats of savings and loans, the home, health and building laws, model tenements, vacation schools, playgrounds, baths, gymnasia, outings, boys' clubs, and industrial training. The author is well called by Mr. Riis, "a common sense champion of the boy." The latter half of the book, especially, is the best general treatment of one of the newer phases of education that can now be found.

*Some Ethical Phases of the Labor Question,* by CARROLL D. WRIGHT, Ph. D., LL. D. American Unitarian Association, Boston, 1902. pp. 207.

Probably no man in this country has made wider investigations into industrial problems and labor conditions than our United States Commissioner of Labor, now also President of the Collegiate Department, Clark University, and no one is more capable of expressing sound and final judgments on matters pertaining to capital and labor. The great strike has given added emphasis to his plea for a wider recognition of the science of political economy of the human, personal element involved in the laboring class.

*University of the United States.* Senate Document, Report No. 945. Washington, 1902. pp. 192.

This document was submitted in April, 1902, by Mr. Deboe. It reviews the action for a national university since 1869 with a description of the hearings, the report of the Committee of Fifteen, the work of Mr. Hoyt and others which are submitted in extract or in whole,

and ends with 300 letters supplementary to 400 published in the Kyle Report.

*Syllabus of Lectures on the History of Education with Selected Bibliographies*, by ELLWOOD P. CUBBERLEY. MacMillan & Co., New York, 1902. pp. 302. Price, $2.50.

One-quarter of this volume is devoted to bibliography. It contains 44 illustrations of schools from the Greek time to the present. It attempts to organize "a subject in which there is as yet no satisfactory text book," and is addressed to librarians as well as teachers and students. It is not a treatise, but a very comprehensive syllabus with most of the pages looking like an index. Its references and headings are sure to be serviceable, but the student could make little use of it save as a guide.

*Handbooks of American Government. The Government of New York. Its History and Administration*, by WILLIAM C. MOREY. The Macmillan Co., New York, 1902. pp. 294.

This is one of the most interesting handbooks in its series, as it should be, dealing with a great State. It well represents the growing appreciation of a knowledge of civil government, a department which is rapidly coming into use in our schools. First, the growth of the government is described and then its structure and work, while the appendix contains chronological tables, excerpts from select documents, synoptics, reviews and statistical tables.

*The Ancient History for Beginners*, by GEORGE W. BOTSFORD. The Macmillan Co., New York, 1902. pp. 494. Price, $1.50.

This book is written in conformity to the recommendation of the Committee of Seven, who advises a year given to ancient history with special reference to Greece and Rome, but with an introductory study to the more ancient nations. As it is intended for beginners, the story is simply told; proper names are syllabified and accented; and the larger topics are printed in bold type.

*From the Old World to the New. How America was Found and Settled*, by MARGUERITE S. DICKSON. The Macmillan Co., New York, 1902. pp. 197. Price, 50 cts.

This book aims to place before young grammar school children a simple, connected account of the discovery and settlement of America. It is written with the conviction that the day of biographical history is passing and that of the book of disconnected history stories is already passed. Sequence and causation are kept primarily in view.

*How Our Grandfathers Lived.* Source Readers in American History. III Selected. Annotated by Albert Bushnell Hart with the collaboration of Annie Bliss Chapman. MacMillan & Co., New York, 1902. p. 371. Price, 60 cts.

This book is in seven parts treating the town, country, travellers out west, the Indians, at sea, the army and at school. It has quaint and curious illustrations of points in the stories and is interesting reading for adults.

*The Cambridge Modern History.* Planned by the late Lord Acton, LL. D. Vol. I. The Renaissance. MacMillan & Co., New York, 1902. pp. 807.

This first volume is in itself a great work of nineteen chapters each by an eminent author. The chapter heads are as follows: The Age of Discovery; The New World; the Ottoman Conquest; Italy and Her Invaders; Florence; Savonarola and Machiavelli; Rome and the

Temporal Power; Venice; Germany and the Empire; Hungary and the Slavonic Kings; France; The Netherlands; The Early Tudors; Economic Change; The Classical Renaissance (by Jebb); The Christian Renaissance; Catholic Europe; The Eve of the Reformation.

*Source Readers in American History.* The Macmillan Co., New York, 1902. No. 1. Colonial Children; No. 2. Camps and Firesides of the Revolution; selected and annotated by Albert Bushnell Hart. pp. 233 and 309.

These two volumes are written with the conviction that the freshest and most direct writings are those that most appeal to children. It is intended to make children's ancestors interesting to them. The illustrations are copious and antique; the language is modernized; spelling is brought down to recent standards; and altogether the books represent a brilliant and interesting new idea.

*School Administration in Municipal Government*, by FRANK ROLLINS. Columbia University Contributions to Philosophy, Psychology and Education, Vol. II, No. 1. The Macmillan Co., New York, June, 1902. pp. 106. Price, 75 cts.

The chapters here deal with the interest of the State in school administration, school boards, external business, supervision, administration of instruction and discipline, and relations of the school to the community, with a final summary chapter.

*Stories of California*, by ELLA M. SEXTON. The Macmillan Co., New York, 1902. pp. 211.

The early condition and subsequent development of California is here the theme, and the romantic events in the wonderful history of this State are well told. Some of the stories explain the remarkable physical features. Interesting are those of the missions, the argonauts, mining stories, wheat fields, and big trees. There are about 40 photographic illustrations.

*The Government of Maine: Its History and Administration*, by WILLIAM MACDONALD. The Macmillan Co., New York, 1902. pp. 263.

This appears to be an admirable hand-book on this subject, with plenty of references, statistics, a chronological table, charters, articles of separation, the constitution of Maine, and an account of each of the departments of government.

*Eskimo Stories*, by MARY E. E. SMITH. Illustrations by Howard Brown. Rand, McNally & Co., Chicago. pp. 189.

This little reader for small children is well illustrated and presents interesting phases of northern life; describes Eskimos, whale, reindeer, walrus, dog, seals, white bear, etc., with various stories; the design being to enlarge the child's acquaintance with the world.

*Select Translations from Old English Poetry.* Edited by Albert S. Cook and Chauncey B. Tinker. Ginn and Co., Boston, 1902. pp. 195.

This book comprises the following classes of literature: epic and historical pieces, secular lyrics, biblical poems, saints' legends, religious mythology, charms, and finally comes a bibliography with four appendixes. The form of the book and the type leave nothing to be desired.

*Macmillan's Pocket American and English Classics.* New York, 1902. Price, 25 cts. Shakespeare's As You Like It. Edited by Charles R. Gaston. pp. 195. Early American Orations 1760-1824. Edited by Louie R. Heller. pp. 199. Geoffrey Chaucer's The Prologue to the Book of the Tales of Canterbury. The Knight's Tale. The Nun's Priest's Tale. Edited by Andrew Ingraham. pp. 337.

These tasteful and inexpensive little books are clear in text and contain abundant and copious illustrative material, notes, glossaries, and dictionaries of proper names, and all are well indexed.

*The Teaching of English in the Elementary and the Secondary School.* by PERCIVAL CHUBB. The Macmillan Co., New York, 1902. pp. 411.

The author's ideas certainly mark a step in advance in this field. The writer seems to have broken loose from most of the worst methods now generally in vogue, and the book may, therefore, be commended to all teachers of the subject, although we confess on the other hand that we should be glad to see a more radical treatment of most of the topics. Perhaps this book will do more good in the present condition of things, as it is certainly full of suggestions pointing toward mitigation of the very grave evils in this field. The author still holds to books or essays about books; does not feel strong enough to defy the consensus of present standard requirements; and, we believe, attempts to do too much and also does not sufficiently subordinate form to substance, but we should be very thankful in this case for the good we have, and the book can be on the whole warmly commended.

*Essentials of English Composition*, by HORACE S. and MARTHA TARBELL. Ginn and Co., Boston, 1902. pp. 281.

This work treats of letter writing, description, narration, reproductions, and essays; gives a special study of Longfellow; treats at great length of style and punctuation, with chapters on secretarial writings and choice of words.

*The Right Reading for Children in the School, the Home and the Library*, by CHARLES WELSH. D. C. Heath & Co., Boston, 1902. pp. 82.

After a list of authorities, the chapters discuss right reading for children in the school, the home and the library, with a graded list.

*Elements of the Theory of the Newtonian Potential Function*, by B. O. PEIRCE. Ginn and Co., Boston, 1902. pp. 490.

This third edition is by a masterly teacher, who has produced here a standard work that has been constantly revised and kept up to date.

*Das deutsche Handwerk in seiner kulturgeschichtlichen Entwickelung*, von EDUARD OTTO. B. G. Teubner, Leipzig, 1900. pp. 154.

This book describes the handwork of early German times, the Middle Ages, the beginnings of city life, the origin of the Guilds, the golden period of German handiwork, and the decay of Guilds.

*Aus guter Familie*, von GABRIELE REUTER. G. Fischer, Berlin, 1902. pp. 380.

This German volume is not without interest to psychology and pedagogy. In it the author has attempted to describe the typical features in the inner life of a German girl beginning at puberty with her confirmation; describing her emotions and inner states of mind with very great fidelity; characterizing the way she reacts to various first impressions of sex without and within; her religious exaltations; her

juvenile and later loves and how they all abort, so that she is left slightly clouded and demented at the age of forty. The criticism, which most Americans would make upon this book, is that it is too much pervaded throughout with the German idea that the chief end in life for a woman is marriage. The characterizations of the gradual changes of her vain affections from one man to another of a totally different type, from young to old, from artist to social reformer, are portrayed with a detail that seems hardly less than confessional.

*Studies in Education*, edited by EARL BARNES. Vol. II, No. 7. Philadelphia, 1902.

The following articles are included in this number: Children's attitude toward future occupation; school girls' ideas of women's occupations; studies on children's drawings; children's stories and poetry; type study on ideals.

*The Laurel Readers. A Primer*, by W. N. HAILMANN. C. C. Birchard and Co., Boston, 1902. pp. 112.

We have here something unique in the combination of words, pictures, colored letters, etc., the result of long study by an expert. It combines more new features than any book in its field in recent years.

*Little Masterpieces of Science*, edited by George Iles. Doubleday, Page and Co., New York, 1902.

These little volumes on mind, explorers, the naturalist, skies and earth, health and healing, invention and discovery, constitute a very attractive pocket library. Some of them are illustrated, and the selections of the editor in general are as excellent as that of the topics of each volume itself.

*Introductory Course of Nature Study*, by PATRICK GEDDES. University Press, Cambridge, pp. 8.

This leaflet is an epitome of six lectures with afternoon excursions. Those who read it will only regret that it is not fuller and more detailed.

*Die Geheimen Krankheiten in ihrer Bedeutung für die Gesundheit*, by PAUL ZWEIFEL. Leipzig, 1902. pp. 15.

This lecture is an attempt to impress upon young men more honor and a higher morale in sexual matters from a medical point of view, and is a sane and wholesome plea for chastity.

*The Modern Arithmetic. Primary and Elementary Grades.* By ARCHIBALD MURRAY. Woodward and Tiernan Printing Co., St. Louis, 1902. pp. 308.

This is the first of a two book series of arithmetics and is largely based on observations made in the class, with careful consideration of the literature, especially Dewey's. Everything is extremely simple and a few of the cuts are colored.

*Stories in Stone from the Roman Forum*, by ISABEL LOVELL. The Macmillan Co., New York, 1902. pp. 258.

Some of the topics here treated are the Forum, Temple of Saturn, Temples of Vesta, Castor and Pollux, Cæsar's Basilica and Temple, and the Roman streets. There are fifteen well chosen photographic illustrations, and the general style of the book is attractive.

*The Poems of Ovid.* Selections. Edited by Charles W. Bain. The Macmillan Co., New York, 1902. pp. 461.

This volume contains 173 pages of text, 108 pages of notes, and a vocabulary of over 150 pages, and is attractive in form.

*Jean Macé et l'Instruction Obligatoire*, par GABRIEL COMPAYRÉ. P. Delaplane, Paris. pp. 104.

*Graded Arithmetics, Seventh Book, Arithmetic, Geometry and Algebra.* by WM. E. CHANCELLOR, M. A. Globe School Book Co., New York, 1902. pp. 176.

*A First Manual of Composition*, by EDWIN HERBERT LEWIS, PH. D. The Macmillan Co., New York, 1902. pp. 292. Price, 60 cts.

*Northern Hero Legends*, by DR. OTTO L. JIRICZEK. Translated by M. B. Smith. London. pp. 146. Price, 40 cts.

*The Capitals of the World. Historical and Descriptive.* Edited by Henry W. Ruoff, M. A., D. C. L. Standard Home Reading Series. Springfield, Mass. pp. 160.

*Laboratory Exercises in Physics for Secondary Schools*, by GEORGE R. TWISS, B. Sc. Macmillan Co., New York, 1902. pp. 193.

*The Story of Creation*, by GIBSON C. ANDREWS. F. H. Word, Greenville, Ga., 1901. pp. 233.

*Stories of Bird Life*, by T. GILBERT PEARSON. B. F. Johnson Publishing Co., Richmond, 1901. pp. 236.

*Medical Inspection of Schools*, by HOMER W. ZIRKLE. Investigations of the Department of Psychology and Education of the University of Colorado. Arthur Allin, Editor. Published by the University, June, 1902. pp. 66. Price, fifty cents.

*The Twentieth Century New Testament.* A translation into modern English made from the original Greek. In three parts. F. H. Revell Co., New York.

*Studies in Old Testament History*, by JESSE L. HURLBUT. Eaton and Mains, New York, 1890. pp. 98.

*A Critical Examination of Gordon's History of the American Revolution*, by ORIN GRANT LIBBY. From the Annual Report of the American Historical Association for 1899, Vol. I, pp. 367–388. Washington, 1900.

*Foundation Lessons in English Language and Grammar*, by O. I. and M. S. WOODLEY and G. R. CARPENTER. The Macmillan Co., New York, 1902. pp. 166. Price, 65 cts.

*Primer*, by BENJAMIN N. BLACK. C. W. Bardeen, Syracuse, N. Y., 1902. pp. 72. Price, 20 cts.

*Eine neue Methode zur Bestimmung der Harnstoffe im Harne.*

*Ein einfaches Verfahren zur Bectimmung des Ammoniaks im Harne*, von OTTO FOLIN. (Zeits. f. Physiol. Chemie, Bd. 32, Heft 6.) K. J. Trübner, Strassburg, 1901.

*On the Quantitative Determination of Total Sulphates in Urine*, by OTTO FOLIN. Reprinted from the American Journal of Physiology, April 1, 1902.

*Ueber die quantitative Bestimmung der Harnsäure im Harn*, von OTTO FOLIN und PHILIP A. SHAFFER. (Zeits. f. Physiol. Chemie, Bd. 32, Heft 6.) K. J. Trübner, Strassburg, 1901.

*On Phosphate Metabolism*, by OTTO FOLIN and PHILIP A. SHAFFER. Reprinted from The American Journal of Physiology, April 1, 1902.

*Fifty Years a Teacher*, by BARNEY WHITNEY. C. W. Bardeen, Syracuse, 1902. pp. 76.

*Black's Graded Readers.* Primer. pp. 72. First Reader. pp. 107. By BENJAMIN N. BLACK. C. W. Bardeen, Syracuse.

*The Satire of Seneca on the Apotheosis of Claudius. A Study*, by ALLAN PERLEY BALL. The Columbia University Press. The Macmillan Co., New York, 1902. pp. 256.

*My First Year's Work.* An Actual Experience. C. W. Bardeen, Syracuse, 1902. pp. 40.

*The Deeper Teachings of Plant Life*, by HUGH MACMILLAN. Thos. Whittaker, New York, 1903. pp. 386.

The topics here give a very good idea of this work, which is not botanical but simply a collection of popular studies showing points of beauty and interest about some common trees and flowers. The chapters are as follows: poetry of plants, cyclamen of the Holy Land, daffodil, wood-sorrel, violet, primrose and cowslip, butter-bur, crown of grass, herb Robert, glaze on the flower of the buttercup, globe-flower, plantain, lopsided leaf, Bible trees, runes of nature, sacred ash-tree, foxglove, roses of Subiaco, grass of Parnassus, bluebell, symbiosis; or co-operation in the plant world, withered leaves, cranberry, in a nutshell, arbor day.

*Special Method in the Reading of Complete English Classics in the Grades of the Common School*, by CHARLES A. MCMURRY. The Macmillan Co., New York, 1903. pp. 254. Price, 75 cts.

The subjects treated here are the educational value of literature, the use of masterpieces as wholes, literary material for the five upper grades, class-room methods in reading, the value of clasics to the teacher. A valuable list of books for pupils and teachers occupies the last twenty pages.

*Real Things in Nature. A reading book of Science for American boys and girls*, by EDWARD S. HOLDEN. The Macmillan Co., New York, 1903. pp. 443. Price, 65 cts.

This is an interesting experiment to introduce scientific material as the substance of a school reader. The book is copiously illustrated and attempts to give young children a pretty complete, general view of the world. Its object is declared to be to teach ideas and facts. Despite the author's disclaimer, it is a new and interesting scheme.

*The Elements of General Method Based on the Principles of Herbart*, by CHARLES A. MCMURRY. The Macmillan Co., New York, 1903. pp. 331. Price, 90 cts.

This is a new edition, revised, and enlarged treating the aim of education, the relative value of studies, interest, correlation, induction, apperception, the will, Herbart and his doctrines. This is perhaps the best exposition of the author's standpoint and is a very valuable book for teachers.

*The English Language. The introduction to the principles which govern its right use*, by FREDERICK MANLEY and W. N. HAILMANN. C. C. Birchard and Co., Boston, 1903. pp. 447.

This book is written to hasten the day of the full emancipation of

the English language from grammar and the needless study of needless distinctions. It seeks to stimulate thought and feeling rather than to dwell upon the technicalities of speech. It is, however, a grammar of a very modern kind treating, especially, the parts of speech, phrases, etc.

*The Rational Memory*, by W. H. GROVES, Gloucester, Va., 1901. pp. 115.

This is a new and interesting edition of an effort to help and to systematize the work of memory. The author shows little acquaintance with the recent experimental studies of the subject, but his aim is chiefly to facilitate the process of recollection, and the book is best classified as a mnemonic system. As such, it certainly has advantages and cannot fail to be of practical service.

*Queen Moo's Talisman. The Fall of the Maya Empire*, by ALICE DIXON LE PLONGEON. K. Paul, Trench, Trubner and Co., London, 1902. pp. 86.

The wife of the famous Yucatan explorer, who believes that the institutions and art of Egypt were derived from this country, has put into poetry perhaps the most important of the old traditions of this people. Her poem is beautifully illustrated by many cuts showing figures and architectural buildings that shed light upon her theme. It is certainly a unique, bold, and, we think, successful effort to reedit to modern taste a section of the ancient traditions of a famous people.

*The Story of the Greatest Nations from the Dawn of History to the Twentieth Century*, by EDWARD S. ELLIS and CHARLES F. HORNE. Parts 41-44 inclusive. Price, 25 cents each. F. R. Niglutsch, New York.

This great work shows no sign of deterioration as its parts succeed each other. It ought to be indispensable in the library of every school where history is studied. Perhaps nowhere has the picture element been better brought out.

*The Reforming Work of the Tsar Alexander II and the Meaning of the Present Development in Russia*, by PAUL VINOGRADOFF. Reprint. Univ. Press, Cambridge, 1902. pp. 40.

*Wergeld und Stand*, von PAUL VINOGRADOFF. H. Böhlaus, Weimar, 1902. pp. 192.

*Educational Manual Training Paper Folding*, by WM. C. A. HAMMELL. B. F. Johnson Publishing Co., Richmond, 1903. pp. 45.

*Mediæval French Literature*, by GASTON PARIS. (Temple Primers.) The Macmillan Co., New York, 1903. pp. 161. Price, 40 cts.

*The Olympian*. Vol. I, No. 1, January, 1903. Price, $1 a year. Nashville, Tenn.

*Pirates and Piracy*, by OSCAR HERRMANN. Stettiner Bros., New York, 1902. pp. 47.

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$5 per Annum. Vol. IX. No. 1. Single Nos. $1.50.

# THE PEDAGOGICAL SEMINARY.

AN INTERNATIONAL RECORD OF EDUCATIONAL LITERATURE, INSTITUTIONS AND PROGRESS.

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## MARCH, 1902.

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WORCESTER, MASS.

*LOUIS N. WILSON, Publisher.*

AGENTS:

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